

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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IMPROVEMENTS IN ANCHORS.



We alluded in our last to the formation of an influential company for the purpose of manufacturing Martin's patent anchor, a large number of which are at present in use, and which has proved itself, after long practical application, to be thoroughly efficient. So long since as Aug. 1859, the Masters and Brethren of the Trinity House, Newcastle-on-Tyne, had a series of carefully-conducted experiments made in their presence; and so conclusive were the results obtained, that they gave a certificate that, having witnessed the several trials, they "did not hesitate to express their most complete satisfaction at the results, and at the same time to declare their full conviction of the astonishing superiority, in every respect, of Martin's Patent Anchor over all those in present use, both in a national and commercial point of view." This opinion has been fully confirmed by the numerous masters of vessels who have since adopted the anchor; the testimonials appended to the prospectus, and which bear various dates, extending to within the last few weeks, being of the most gratifying character.

The Trinity House tests at Newcastle appear to have been conducted in the fairest manner; the anchors were laid on level ground, and drawn together by a triple block with a chain-fall, and two winches having fly-wheels. Immediately upon the winches being set in motion, Martin's anchor is described as having at once begun to grip. By the time that Rodger's had turned over, as it must do before it can begin to grip, Martin's had obtained a firm hold of the ground. The motion of Martin's anchor gradually decreased as it sank into the ground, until it came to an almost dead stand; while Rodger's was drawn at a rapid rate towards it until the blocks met. The ground which each had traversed was then measured, and it was found that while Martin's had been drawn but 11 ft. 8 in., Rodger's had been drawn 54 ft. 9 in.—Rodger's is said to have literally cut through the ground like a knife, while Martin's ultimately stood immovable. This was observed in all succeeding trials. The trials were, without doubt, most satisfactory for Martin's anchor. The anchor is much admired for its lightness and portability, and it is calculated that it is hauled in with 50 per cent. less labour. From the above diagram the character and relative merits of the anchor will be at once understood, more especially when we state that in almost every testimonial which has been received Martin's anchor has been used to replace others of from 50 to 100 per cent. greater weight.

It is considered that the nett profits which the company for manufacturing these anchors will realise will be very large; and in addition to this they have taken powers to extend its business not only to the manufacture of anchors, but also to chain cables and other metal work relating to shipping. Amongst the advantages which it is pointed out attend the use of Martin's anchor, it is stated that whilst its holding power so far exceeds that of all other anchors, it also bears the proportionate increase of strain required; that having no stock, and both flukes taking hold of the ground at the same time, it can neither foul nor become fouled; and, being composed of three main parts, it can be taken to pieces and stowed away with facility, the great advantages of which will be appreciated by all practical men; and that from the nature of its construction, it dredges well, can be tripped, catied, and fished much more easily than any other anchor. It is estimated that England has about 40,000 merchant ships of all sizes afloat, and about 2000 new ones are built annually. Allowing three anchors to each ship, the number required will be about 120,000 in all. Now, as each anchor lasts on an average only eight years, it follows that to supply wear and tear and loss consequent on shipwreck and other accidents, and to fit out new ships, above 15,000 new anchors are required annually. This is entirely independent of the Royal Navy and the export trade. The company estimates that one-fourth of the whole anchor trade of the country will fall into their hands, and that a profit of fully 30 per cent. will be realised upon the cost of manufacture, a percentage which certainly ought to satisfy the most voracious.

IMPROVEMENTS IN PUMPS.

We have so frequently referred to the advantages obtainable from the adoption of the improved chain-pump, invented by Mr. J. U. Bastier, that most of our readers are, doubtless, well acquainted with its merits. Like many other inventions of great practical utility, it has taken long to secure the appreciation of the public, and it is only by continued success of the few that have been erected, and the extraordinary perseverance of the inventor, that its reputation as an efficient pump has been at last fully established. Several pumps are now in course of construction, and, from the purposes to which they are to be applied, it is probable that compensation will be obtained for the outlay that has been incurred, and the obstacles which have had to be surmounted. Four of the pumps now upon order will be delivered in the course of a few weeks, and we do not doubt that the results obtained with them will create a favourable opinion of them in the several districts in which they are to be erected. The first of those in question is a large pump, to be applied to irrigation purposes in Algeria, by Mr. Majorel, the prefect of Oran, who, after the most minute examination of that exhibited at the recent International Exhibition, and a careful comparison of it with those of other exhibitors, considered that it was entitled to the preference. Two other pumps are to be sent to Egypt, Mr. Theuer, the engineer-in-chief of the projected railway from Alexandria, having decided to adopt them. Another is to be fixed at the works of Messrs. Samuel Berger and Co., the well-known starch manufacturers of Bromley-by-Bow, and we understand that negotiations are going on for several other pumps, which proves beyond question that the importance of the invention is now becoming appreciated.

Although we have already published the mechanical details of the invention, we take the opportunity of inserting a diagram of the pump, in order that its construction may be more thoroughly understood by those who did not inspect it at work whilst in the Exhibition. The improvements which Mr. Bastier has introduced are such that the leakage of water is even less than with the ordinary bucket pump, whilst there is no back action whatever, the water always flowing forward in a continuous stream, equal in volume to the full size of the tube which forms the body of the pump. In the accompanying diagram, A is the pulley by which the pump is put in motion, the motive-power being a steam-engine, water-wheel, or any other motor which may be at hand. This pulley is regulated by a fly-wheel (K), and is upon the same axle as the grooved wheel (G) which carries the chain of the pistons. P is the body of the pump, which is constructed of enamelled iron, the joints being flanged and bolted, so that perfect smoothness is obtained, whatever may be the length of the pump. The chain is provided with pistons of gutta-percha and vulcanised India-rubber, a metre apart, and the grooved wheel is so formed as to grip the chain firmly, yet never to permit the pistons to come in contact with it, so that abrasion is impossible. The pistons are marked II in the diagram, and when passing up the tube (into which they enter through the funnel-shaped mouth, E) packed sufficiently to prevent escape of water, yet not so tightly as to cause any appreciable friction; indeed, it has been found that four years continued use of a pump has not rendered the renewal of the India-rubber necessary, its elasticity apparently securing it from injury. The frame (N) carries the axle, and completes the pump, the whole apparatus not occupying more than one-fourth the space usually absorbed.

As soon as the pumps shall have been fully tested at Oran, on the Alex-

andria Railway works, &c., we shall be glad to publish the results, and do not doubt that the favourable opinion we have so frequently expressed of the invention will be realised.

Original Correspondence.

ELECTRO-MOTIVE POWER—ECONOMIC PRODUCTION.

SIR,—In his admirable address at Newcastle, Sir W. Armstrong mentions electricity as being supposed likely to furnish a substitute for coal, and shows that battery action is too costly, because involving double decomposition. He also remarks that motion is convertible into electricity. Let me add that we shall probably find here a solution of the problem. By means of magnets and of motion the most powerful and steady currents of electricity can be generated to produce the light which nightly joins England to France, or for the deposition of metals, or the decomposition of water. This last most important application has by no means received due attention. Unsuccessful and imperfect attempts have been made to produce by this means oxygen and hydrogen gases in large quantities. Steam as the motive power is inadmissible, because, as is now known, the gases evolved will produce no more heating force than is required to raise the steam. But tide, wind, and water-mills furnish always cheap motive power. We have only to convert this into oxygen and hydrogen gases by means of magneto-electricity to supply ourselves with stores of fuel, so boundless as to enable us to contemplate with composure the incessant destruction of our coal seams—hitherto the strong foundations of British power and renown. G. A. KEYWORTH.

Hastings, Aug. 31.

COPPER MINES.

SIR,—I have noticed several letters of late relative to the price of copper during the last two years: this great depression, I presume, has been owing to the large quantity of copper ore sent to this country from Cuba, Chili, &c.; but as one of the largest copper mines in the world, since the mines in the Island of Anglesea have ceased to be so productive, it is said to be just exhausted, we may hope for better times at no distant period. Doubtless for a great many of our once celebrated copper mines yielding so much tin of late years, many of these mines during this depression would have been wound-up. The tin has, doubtless, saved these mines from destruction, and it is hoped that many of these will ere long return to the dividend list of mines, and reward those whose patience must have been so severely tried by the constant calls made upon their purse-strings during this great depression. The Coburn Mine has, I believe, sent from 200,000 to 250,000 lb. value in copper ore annually to Swansea since the year 1828 or 1829, and in 1833 the returns from this mine amounted to 357,000 lb., while the Great Devon Consols has not yielded quite 2,000,000 lb. The mines in Anglesea yielded 80,000 tons of copper ore annually for 50 years; and one lode, to the north of Marazion about a mile, yielded from the Old Wheal Fortune to the Godolphin Mines, a distance of five miles, copper ore to the value of 6,000,000 lb.; but the district surrounding the ancient town of Marazion may be said to have been almost deserted during the last half century. From the year 1720, the year the Old Wheal Fortune was discovered, up to 1820 more copper ore was shipped from the port of Saint Michael's Mount than from any port in Cornwall or Devonshire; and it is to be hoped there is some good fish still left in the sea, and some good mines to be again found in this district. A CORNISHMAN.

Sept. 1.

CORNISH MINES, AND SUPPLIES.

SIR,—I am exceedingly glad to find that the subject of supplies to Cornish mines is likely to be enquired into, and if I may judge by the very proper letters of your correspondents of last week and the week before, the whole question of supplies will be well ventilated; indeed, the whole system ought to be upturned, and placed upon a new and improved basis, if the lords of the land intend to have their ground worked by capitalists out of Cornwall, for I can assure you, here in London, very many gentlemen will never again touch a Cornish mine, they are so thoroughly disgusted with the mode of management. In one of the mines in which I was a shareholder I took the liberty to express my views to the principal agent, when down in Cornwall, and he told me at once—"I do not regard the shareholders a straw, for they may have shares to-day, and to-morrow we may hear no more of them." No doubt, Sir, this is a view taken by most mine captains as to London adventurers, but where would the Cornish mines be if they were worked by Cornish capital only? It is, therefore, essential that the greatest care should be taken by mine agents as to how they spend the money entrusted to them. It should be expended in the best, the most economical, and conscientious manner in everything; for I believe that not only timber but other materials, such as steel, iron, coals, candles, &c., will bear a pretty deal of sifting. I have long given my attention to these matters, and am free to confess that I am not at all satisfied with things as they are. Now, as to timber, I cannot give you a correct account of the measurements in the different mining districts, but I am informed that a wagon load of timber (say, 4 tons) taken to the mines from Plymouth, Looe, Fowey, or Charlestown is 200 ft. cube, but if the same wagon and horses took its load from the ports of Truro or Gweek, it would only carry 158 ft., although paid for carriage of 200 ft., and the merchants also will be paid for 200 ft.; if taken from the "Mount" or Penzance 154 feet, and from Hayle 160 feet—all of which will go to the mines as 200 feet of timber. These differences surely require to be explained very clearly before I, or any other London shareholder, can comprehend them. I should very much like to see a monthly price list published in the Journal for goods charged at the different mines, then shareholders living in London or elsewhere would have some idea as to the reasonableness of charges on timber or any other articles. Perhaps, your excellent correspondent, "An Old Adventurer," will enlighten us with some facts and figures on the subject. AN OUTSIDER.

CORNISH MINES, AND SUPPLIES—TIMBER.

SIR,—Norway timber is charged with duty by a measurement quite different from that by which the quantity is generally charged to the mines. The Customs' measure is the mean of the diagonal and the square, the divisor being 183; this is considered to give the true contents, allowing for the defective angles. The merchant measurement is the mean of the two sides, the divisor being 144 (as if there were no defective angles), and this gives about 22 per cent. more than the Customs' or actual measurement; but this measure is often mere guess work, and the consumer may be sure he gets no benefit by that. At the Devon Consols Mine this practice was discovered many years since, and was considered so objectionable that they resolved on being their own importers; and the timber they used, though more costly at first, is cheaper in the end. Their timber is squared, by which a much greater quantity of the sap is removed, and the timber more durable, and, probably, the scantling of it is not so large, and thus a double saving is effected. The objectionable practice herein referred to was made known to the late Mr. Treffry, and the tenders for his mines have been required to be given in accordance with the Customs' measure, and the quantity can thus be checked at the Custom House. The difference of price may thus be accounted for, but the difference of locality must affect this question considerably.—St. Austell, Sept. 1. OBSERVER.

LOOK TO YOUR ARTICLES OF ASSOCIATION.

SIR,—Mr. Brook is clearly in error in stating "that promoters and directors cannot, as stated by 'Lux Obscura,' bind shareholders to articles which have never been submitted to them." Promoters not only possess this power, but they actually cannot register a company under the Act of 1862 without exercising it, either by omission or commission. In the one case, by omitting to register special Articles of Association, they impose upon the company the adoption of Table A. In the other, they can impose upon the company special articles, either superseding or modifying Table A, by simply having such articles signed by the subscribers to the Memorandum of Association, and attached to, and registered with, the latter (see Clauses 14 and 15 of the Act, 1862). In neither case is it necessary to consult the shareholders—indeed, it is not possible to do so, as companies are formed and registered before the general public are invited to take shares; and it is distinctly stated, in Clause 16, that the members of the company (of course, either present or future) are bound by such articles to the same extent as if signed by each. Shareholders, however, have the power, by Clause 50, of superseding or altering the Articles of Association, by special resolution; and this, no doubt, was the case with the company of which Mr. Brook is secretary, where, I presume, no articles were registered with the Memorandum of Association, and the directors were consequently obliged, in order to do away with Table A, to conform to the formalities correctly referred to by him. But it is evident that, by adopting the special articles when registering the company, there would have been no necessity to consult the shareholders at all. As regards the particular clause which has given rise to this discussion in the Journal, I agree with "Lux Obscura," that it is an objectionable one. No arbitrary power should be vested in directors which might be liable to be abused by them, and the exercise of which would at the best be a most invidious and unpleasant duty. Rule 10 of Table A affords quite

sufficient protection, and a refusal to register a transfer of shares on any other ground than therein stated would be a reflection on the credit of the transferee, and might render the directors liable to an action.—Liverpool, Sept. 1. R. M. C.

LOOK TO YOUR ARTICLES OF ASSOCIATION.

SIR,—I quite agree with the remarks of your correspondent, that it behoves any persons taking shares in a new company to look previously at the Articles of Association. I find in those of a recently-registered company (the name of which I will not now disclose, though I may hereafter), in which I have taken shares,—1. That there is no amount of capital stated, and, therefore, no limit to it;—2. That no mode of its application is provided for;—3. That there is no qualification of directors, though their remuneration is not forgotten;—4. That a power is given to the board, independently of the shareholders, to borrow 20,000 l. Such articles as these need no comment. But, surely, if any applicant for shares agrees to take them, "subject to the Articles of Association," as is now the form, he must be both legally and equitably bound by them, whatever they may afterwards turn out to be. CAUTION.

FRAUDULENT PROMOTERS OF JOINT-STOCK COMPANIES.

SIR,—Such companies as the above have so accumulated of late, that it is high time some protective society should be formed, not merely to expose the gross and barefaced frauds which are a disgrace to the commercial world, and the character of the British mercantile community, but definitely and positively to institute proceedings against the culprits, so as to bring them under the chastisement of the criminal law, which I feel persuaded can be done in many cases if energetic steps were taken. It would be a national benefit to expend 10,000 l. yearly to institute such proceedings against some of your honourable directors, who give their names, and take free shares (fully paid-up) and sundry fees without services, talent, or interest. Your correspondent, as a small man, would be money in pocket by the outlay of 10 l. yearly, and is willing to make an annual sacrifice to clear out some of these pests of honest adventurers, who willingly subject themselves to honest losses beneficial to the country at large, but who in many cases withdraw their capital from all such undertakings, because of the gross frauds and misrepresentations which accompany many, if not most, public undertakings of the present day.

Directors generally, I presume, are not themselves the schemers, but when they give their names under such circumstances of personal advantage, they richly deserve to be punished, if possible, for their conduct, by which they become annually the ruin of thousands of honest hard-working men, who enter into such concerns, not with confidence in the schemers, but trusting entirely to their names as men expected to investigate the representations. But these bribes have converted our honourables, our colonels, our nobility, and even our clergy, into instruments of dishonesty, and it is high time a stop should be put to it, by chastising severely some of them. Even one or two examples would infuse a terror through the whole race, that would in some cases bring about reformation, and at any rate put a stop to the further success of fraudulent companies, if the public would but insist on certain conditions in every new undertaking.

I suggest that a society be formed, with branches in each commercial town, who should be authorised to investigate every new joint-stock company, and that the public should point blank refuse to entertain any undertaking unwilling to be subject to the requirements and investigation of the said society. In other branches we have protection, why not in these? We have our Lloyds for ships, and our Guardian societies for tradesmen. Why not, therefore, some company assessors? Let every shareholder sum up his losses by fraudulent promoters for the last two years, and I am sure he will find good cause to feel liberally disposed to support a properly, honestly organised institution, even if he have no desire to remove evil for the sake of benefiting society. Of course, in such a protective society directors must be men of unqualified integrity, giving their services gratuitously, and holding no management in any public commercial company; paid secretaries and clerks should, so far as possible, be men selected specially calculated to promote the objects of the society, liberally treated, but not endowed with secure appointments. COMMERCIAL.

TO THE SHAREHOLDERS OF EAST CARADON MINE.

GENTLEMEN,—With respect to the meeting of the members of the Mining Exchange last week, I beg to inform the shareholders of this mine that I took the earliest possible opportunity of informing them of the discovery, as soon as I could ascertain the value of the lode cut; and to them alone I am accountable as the manager of their property, as I feel quite indifferent to the opinion or resolutions expressed by any "bull" or "bear" of the Mining Exchange: the chief speaker at that meeting not being a shareholder, and the gentleman applying for a preliminary order to inspect being a holder of one share. My duty being to advise the registered shareholders first of any discovery—men who have been my co-partners from the commencement, and have borne the anxieties and expenditure of the mine, and who now should realise its benefits, and not to those who, by anonymous letters and scandalous advertisements, seek to frighten them out of their property by every means in their power. It is to the shareholders I again repeat, we have in East Caradon a good, permanent dividend mine. JAMES SKEWES.

ALFRED CONSOLS MINE.

SIR,—Although, fortunately, not a shareholder in this mine, I am induced, in the interests of several of my clients, to beg the favour of a space in the Journal, for the purpose of calling attention to the affairs of that luckless adventure. It would appear that, during the past twelve months, upwards of 20,000 l. has been demanded of the shareholders for purchase of Great Alfred Mine, and for calls. During that period the shareholders have been fed with reports, invariably favourable, signed by Capt. Bawden and Teague; and, in a report forwarded about May last, those gentlemen seem to have considered the prospects most encouraging. The hopes of the credulous adventurers were, however, soon to be crushed in a most mysterious manner; for in a circular issued by the pursuer, June 11, a meeting was announced to wind-up the mine, in consequence of its "continued poverty, and the numerous relinquishments of shares. On June 23, a meeting, consisting of the committee, and about two disinterested shareholders, was held at Hale, and a circular sent round afterwards, announcing another call, and that the mine was to be stopped and the materials sold off as soon as possible. The committee, also, for the first time, told the shareholders of unpaid calls, about 4000 l., and a liability of 7000 l. or 8000 l.; but what the latter item is for no shareholder seems to know. The last account rendered by the pursuer has been shown to a gentleman who is pursuer to a large number of mines, but who cannot understand what the liability means, nor do the committee seem to think it worth while to vouchsafe information, or to give any idea of what amount will probably be required to clear off the debts of the mine. A shareholder has received a letter from the neighbourhood of the mine, in which the writer says—"I fear Alfred Consols will be a serious affair to wind-up, and no doubt, the mine has been awfully imposed upon; besides which, owing to the run in the engine-shaft, they will lose 60 fathoms of pitwork; but, worst of all, the calls in arrears are most enormous, and many persons are not to be found. I expect that those who can pay will have to do so for others. I think a committee should be appointed by the distant shareholders to have the accounts thoroughly gone into by some competent person." In the hope of obtaining for them that very desirable object, I am induced to ask your powerful aid, so that the heavy charges may be investigated, and the committee be made to render an account of their very unsatisfactory stewardship, and be made to pay their share of the debts. From the list of shareholders in my hands, it appears that the majority are very distant from the mine. To this fact, added to the usual sparsity of adventurers, must be attributed the present wretched state of the mine; for it has never received any mine by any means quite overlooked. Such proceedings in mining have the effect of casting immense discredit and disavowal on the profession, and certainly deter many respectable, nay wealthy, men from embarking in it. G. HEWLETT.

Auction Mart, London, Sept. 3.

LANIVET TIN MINES.

SIR,—I am pleased to see Mr. Thomas's remarks on the Lanivet Tin Mines, but if his views were carried out, it would prevent that benefit to the people in the neighbourhood, and to the mining public generally, which has already been the case; and also it would certainly prevent that rapid development of our rich tin district, which is being carried out with great energy and success. My plan is (in having to do with a new mine), to open up so many of the lodes as possible, and that, too, in different parts of the mine, then either take some to a neighbouring stamps, or have the ore assayed, and give the result to the world. In this way it gives people an opportunity of coming in with very little outlay of capital, and making a great deal of money. I shall never recommend any mine to be worked, unless I think sufficiently highly of it to have, and continue to have, a holding in myself, according to the capital which I can afford to lay out in it. His course would be to get the mines into the hands of a few very wealthy people, and if we could get shares at all, I fear it would be at very long prices. As I can find the lodes, and trace their course by what is termed the divining-rod, I can very easily, and with very little expense, especially where the lodes are so near the surface as in Wheal Eather, South Trebell, &c., put down pits, open on the lodes, and try their value. T. M. PASCOE.

Newquay, Sept. 3.

NON-PAYMENT OF CALLS.

SIR,—The all-important question of non-payment of calls still attracts the attention it merits. There has of late been an outcry that the public are very rapidly drawing off from mining investments and speculation; beyond a doubt, this is quite true. The chief cause of this is that there exists a strong conviction that the present gambling speculations and transactions by unprincipled brokers and second-rate clients—often as weak in pocket as in self-command—have made the mining market as awkward a field for the uninitiated as the worst sections of the horse-racing and betting community—in fact, by many it is considered rather worse. Of course, I do not mean to say there are not many highly respectable firms, who can be safely trusted, and who will candidly tell clients that they are themselves much at the mercy of the terrible state of things created by the unprincipled party. The non-payment of calls arises greatly from the results of the operations of those persons; but with regard to this point, I would take the liberty of quoting a passage from the letter of a "Cautious Man," in the Journal of August 22, which seems to me to embody in a few lines what it would take some people a column to explain:—"If calls were paid up in a punctual manner the merchants' bills would very seldom be more than a few months in arrears; and, therefore, a shareholder would be quit of all his liabilities in less than a year after his connection with the mine had ceased. Every means should, therefore, be taken to make defaulters pay up their calls, and if they are more than one call behind hand their shares should be forfeited to the company, and sold by auction. By strictly adhering to this plan, doubtful shareholders would be quickly got rid of, honest men would get possession of their shares, and debts would be of very short duration." Here is the matter in a nut-shell, and let "steady class" shareholders look to it and act upon it, if they wish to restore public confidence in mining, and thereby test the true value of their property, and to hasten the time for placing their progressive mines in a dividend state. Let them insist on seeing at each meeting a list of defaulters, and if the officials seem to hang fire let them use the remedy, which is in their own hands—by withholding the sines of war until defaulters have either paid-up or their shares are forfeited. This is the only means of purging the list, and until it is done mining will not take its proper place in our national enterprises. One or two resolute men in a company can do it, and there are always such to be found, who will act when they know how. STAND FIRM.

GOLD IN NOVA SCOTIA.—A correspondent from Sherbrooke, St. Mary's (Aug. 16), writes—"Five tons of quartz from the Cummings Lead were taken off and crushed during last week, yielding 62 ozs. of the precious metal. This is the product of five men's labour for six days, at a depth of about 15 feet from the surface. The quartz was not picked, but sent to the crusher as it was taken from the lead, which is a large one, and easily worked. I leave it to the public to calculate the amount per day which this would give to each man employed as a return for his labour, and thereby judge of the value of our gold fields in this district."—Halifax Reporter, Aug. 20.

Meetings of Public Companies.

LLANTWIT VARDRE COLLIERY COMPANY.

The first annual general meeting of proprietors was held at the company's office, Waterloo-place, Regent-street, on Wednesday, Lord HENRY GORDON in the chair.

Mr. J. HOGGARD (managing director) read the advertisement convening the meeting, and a balance-sheet, made up to July 31, was presented, of which the following is an abstract:—

Amount paid on 2365 shares	£7534 10 0
Amount of 400 shares, fully paid-up, issued in part payment of purchase-money for Hendresey estate	2000 0 0
Amount of 16 debentures, interest in part payment of ditto, and interest thereon	1048 0 0 = £11,182 10 0
Preliminary expenses	£1500 0 0
Cost of Hendresey estate	7000 0 0
Plant and machinery	526 2 10
Working expenses at colliery, management, rent of offices, stationery, &c., interest on debentures, and incidental expenses	882 17 4
Law expenses	170 0 0
Amounts due	104 11 11 = 11,182 11 9

Cash at bankers £ 998 18 3

CAPITAL ACCOUNT.

Capital	£20,000 0 0
Amount received on 2765 shares	£9534 10 0
Amount remaining due on ditto	4290 10 0
Amount of 1235 shares not subscribed for	6175 0 0 = £20,000 0 0

The report of the directors was then read, from which the following is condensed:—
Your directors, at this first annual meeting of the shareholders, have to express their regret that the progress of the work at the colliery has not been so forward as they could have wished. Their belief in the ultimate success of the undertaking is, however, undiminished. The want of a proper engine to keep back the water was one great cause of delay; this has now been remedied, and the engine will go to work in the course of a week or so, when your directors hope to hear of successful efforts at winning the coal. They regret the dissension that had been caused by certain persons, which had created doubt and distrust amongst the shareholders, and greatly impeded the board in the execution of their duty, and rendered abortive steps which were being taken to increase the capital of the company by the disposal of the unallotted shares. They trust, however, that the shareholders in future will not suffer their property to be injured by unscrupulous attacks. The accounts have been fully tested, and found perfectly correct, by the auditor of the company. Your directors, pursuant to Act of Parliament, retire from office at this meeting, but offer themselves for re-election.

The CHAIRMAN moved that the report and balance-sheet be received and adopted. Mr. D. LLOYD had much pleasure in seconding the proposition. The MANAGING DIRECTOR said it would, perhaps, save a great deal of time if he were at once to state that there were several gentlemen present who, although undoubtedly perfectly entitled to attend the meeting, yet had no legal right to vote, simply because they had not been shareholders for three months, and that there were others who had not paid their calls; they also, were not entitled to vote. He then referred to the various items in the balance-sheet, and stated that the accounts had been examined by Mr. Holah, public accountant, who was present, and would be glad to answer any enquiry that shareholders might make.

Mr. MILES SETON stated that he had gone through the balance-sheet, and it appeared to him that the company was nearly 500l. in debt. Mr. HOGGARD was sorry to be compelled to interrupt Mr. Seton; but he could not allow the meeting to proceed under the impression that the company was 500l. in debt. He (Mr. HOGGARD) was not aware that the company was in debt at all. It was true that there was owing upon the debenture bonds 1600l.; but there were arrears of call amounting to 1100l., and they had 998l. in hand. Mr. SETON then referred to the purchase-money and the preliminary expenses. Mr. HOGGARD said, so far as the purchase-money was concerned, it was in accordance with the amount stated in the prospectus, and, therefore, known to every shareholder before he became connected with the company; but he could not help saying that he did not think the amount in any way excessive. Mr. SETON thought the royalty of 1s. per ton upon large and 6d. upon small was very high. Mr. LLOYD stated that the average royalty in that district was 1s. per ton, and, therefore, the terms upon which the company would work the coal were far below the average.

Mr. HOGGARD said, so far as the preliminary expenses were concerned, it was the amount that was by resolution agreed to be allowed, and with which he had nothing to do. He then read the minute in the directors' book which contained the resolution referred to, by which it appeared that the promoters undertook to defray all the expenses of advertising, brokers' charges, and commission upon the sale of the first 2000 shares, registration, rent, the expenses of secretary and manager, printing and the first three months' stationery charges, share certificates, and the common seal, for the sum of 1500l. All he (Mr. HOGGARD) had to say was that he did not think 1500l. too large a sum for preliminary expenses.

Mr. COL. WRAGGE then moved, as an amendment, that the balance-sheet be not adopted, inasmuch as it is not in accordance with Article 80 of the Joint Stock Companies Act, 1862, which states that a statement of the income and expenditure, and the expenses of salaries, shall be shown. Mr. GLEDHILL (the company's solicitor) stated that the balance-sheet, as presented, comprised the expenditure for salaries, and every other item was shown, which was as much as could be expected.

Mr. HOLAH (the auditor) stated that the 71st section of Table B cited what should be done when a company is in a working condition; but this company is not in that condition. The amendment required that the balance-sheet should show the income, when it must be known there was no income. In the present state of the company, the balance-sheet, as presented, was the only one that could be made out. Mr. COL. WRAGGE: But a dividend is going to be paid. Mr. HOGGARD said it would be impossible to pay a dividend when nothing had been earned. What they were going to do was to pay the guaranteed interest.

Mr. GLEDHILL said that 325l. had been taken by the directors. Mr. HOGGARD said the directors had never received anything of the kind; all they had received was 200l. for a year's salary. Mr. GLEDHILL: But it was received on March 25. Mr. HOGGARD said that the directors had received only 200l. per annum for their first year's remuneration, and that they would receive no more than 200l. per year until the shareholders had received dividends of 10 per cent. per annum out of profits.

After some further discussion, Mr. SETON seconded the amendment. The question was then put, when there appeared, present and proxies, in favour of Col. WRAGGE's amendment 356 shares; against it, and in favour of the directors, 1207. The resolution was, consequently, put and carried. It was then agreed that the business of the ordinary meeting should be adjourned till after the business of the special meeting was disposed of.

Mr. SETON then proposed the special resolution, of which he had given notice, to the effect that certain shareholders should be elected directors in lieu of those retiring, which was seconded by Mr. PAPPS. The question was put, and immediately negatived.

Mr. HOGGARD said, as it would be for the interests of the shareholders that all contentious feelings that had previously operated against the progress of the company should be among the by-gones, he was now prepared to invite Mr. Seton to a seat at the board. (Hear, hear.)—It was agreed that certain specific resolutions shall henceforth be the Articles of Association, and that the special resolutions were precisely similar to those which had previously governed the company, with the exception that the directors would receive a reduced salary of 200l. per annum. Some discussion arose as to the salary of the managing director, who eventually agreed to accept a reduced salary of 400l. per annum.

The business of the ordinary meeting having been resumed, it was unanimously resolved, upon the proposition of Mr. D. LLOYD, seconded by Mr. FLEISHER, that the retiring directors, Lord Henry Gordon, Mr. Joseph Hoggard, Mr. James Broadhurst, Mr. A. F. Clayton, and Dr. Chepman, be re-elected directors of this company, and that the thanks of the shareholders are due, and are hereby tendered to their managing director, Mr. Joseph Hoggard, for the energy and ability with which he has conducted the affairs of the company; and, upon the proposition of Mr. LLOYD, seconded by Mr. HOGGARD, it was unanimously agreed that Mr. Miles Seton should be appointed to a seat at the board.

Messrs. Holah and Roberts were appointed auditors for the ensuing year. A vote of thanks to the Chairman terminated the proceedings.

CLIFFORD AMALGAMATED MINING COMPANY.

A meeting of shareholders was held at the mine, on Aug. 19, when the accounts for May and June showed a profit of 1909l. 5s. 9d. A dividend of 12s. 6d. per share was declared, and 275l. 1s. 11d. carried to credit.

The following report was read:—

Aug. 19.—Wheal Clifford, Eastern District: The 212 is driven 15 fathoms east of the engine-shaft; lode in the end 7 ft. wide, worth 13 tons of ore per fm. We are now got into the western end of the course of ore mentioned in my last report: 18 fms. east of the shaft there is a winze sinking in the bottom of the 200 in a fine course of ore, worth from 10 to 12 tons per fm. The 212 fm. level end men are rising against the winze in equally as fine a course of ore. We expect to communicate here in a fortnight, which will bring down a fine current of air to the bottom, when we shall again commence to sink our engine-shaft for deeper levels. The 200 is driven 67 fathoms east of the shaft, in a fine course of ore for upwards of 60 fms. in length; for the last 3 fms. the lode has been small, but it is now opening again, and worth 3 tons of ore per fm. The 190, driving east, has been improving, and is worth 4 tons of ore per fm. The stopes working in back of the 200 and bottom of the 190, east of the shaft, are worth 9 tons of ore per fm. each. The 212 is driven about 6 fms. west of the shaft; lode 4 ft. wide, producing stones of ore. We are not in far enough to meet with the ore in the level over, and the ground has been troublesome for driving. The lode in the 200, west of shaft, is 8 ft. wide, worth 12 tons of ore per fathom. There are three stopes working in bottom of the 190, before this end, which will average 15 tons of ore per fm. each. The 220, driving east from the United Mines boundary, is 8 ft. wide, worth 12 tons of ore per fathom, and there are five stopes working in back of this level and bottom of the 208, averaging 13 tons of ore per fathom each; and there are two stopes working in bottom of the 220, east of the boundary of United Mines, worth 8 tons per fm. each. The 190, driving east on the south lode, is worth 3 tons of ore per fm. The ground at Frederick's shaft is favourable for sinking. The shaft from the surface is now near 70 fms. below the deep level, and the cross-cuts are all in except the 160; here there are 3 fms. further to drive so as to get in to rise and sink. The rise against the shaft above the 120 is up 26 fms., and the shaft sunk under the 120 about the same distance. We are now rising above the 190; rise up 6 fms. In this part of the mines we are in a good state of working, and the prospects are very good. United Mines District: Since our last account we have made a very good discovery in the deep part of the mine. The 220, driving west from Taylor's shaft, on the north lode, is worth 8 tons of very good ore per fm. This level is going back in a high place of ground, and from every appearance will make a great quantity of ore. We have commenced to open ground over it in the 208, and also to drive the 230 westwards it. There is a lode in this end 2½ ft. wide, producing stones of ore; this level is a great distance below the 120, and is driven west from Hocking's shaft, is producing stones of ore and tin. The 140, driving east from Sampson's shaft, on Cupboard lode, is producing stones of ore and tin. Buzza's Shaft: The 30, driving east on the Malleable lode, is producing 4 tons of ore per fm.; the 30, driving west on the north lode, 2 tons, and the 30, driving east, 6 tons per fm. The western winze sinking on this lode, in the bottom of the 30, is down 9 fms.; the first 7 fms. sinking produced 10 tons of ore per fm.; the bottom of the winze is now worth 7 tons per fm., and there is another winze commenced east, under where the new shaft will come down, worth 7 tons per fm. The 18,

driving east on the north part of the lode, is worth 3 tons of ore per fm., and a rise in the back is producing about the same quantity. The 18, driving east on a south branch, is producing 3 tons of good ore per fm. The 18 west is producing stones of ore. There is also a winze sinking on this lode down 6 fms. under the 18; first 3 fms. sinking lode worth 3 tons of ore per fm. The lode in the winze afterwards went small, but it is now getting better, worth 1 ton of ore per fm. Taking the United Mines generally, the prospects for the last two months are very much improved. The course of ore cut in the 220, driving west from Taylor's, to every appearance is a very great discovery, having a vast deal of high ground to the westward, which, I think, will be found to produce large quantities of ore. Poldory District: Here our prospects are a little better. By sinking a winze under the 18, on Tiddy's lode, we have discovered a lode worth for ore and tin 20l. per fm. We are also cross-cutting north from Tiddy's shaft, in the 18 and 26, to discover the productive lode met with at Bazzas's. The 40, driving east from Little Richard's shaft, is worth 1 ton of ore per fm. The 40, driving west, is producing stones of ore. The 50 and 36 are driving west from Wheel Moor shaft on Wheel Moor lode, but we have not met with anything to notice in these levels. Consols District: The lode in the 130, driving west from the boundary shaft, is 2½ ft. wide, producing stones of ore. The lode in the 120 is small and unproductive. There is also a winze sinking from the 120 to the 130, which we hope to communicate by the end of next week. The 30 from the surface, driving west on the tin lode, is opening ground that will work on tribute. The add cross-cut is driven 12 fms. north from the shaft, but thus far no lode cut to notice. At Lyle's shaft the 60, driving east on Bowden's north lode, is worth 1 ton of ore per fm., and the winze sinking below it is opening tribute ground. On Bowden's south lode the 50 and 80, driving west, are sinking tribute at present. The pitches working are producing about their usual quantities of ore. Taking this extensive concern generally, the prospects are better now than at the last account. The course of ore discovered in the 220, west from Taylor's, will very much increase the returns in this part of the mines. The ore will make a produce of 12.—JOHN RICHARDS.

ST. DAVID'S GOLD MINING COMPANY.

The first annual meeting of proprietors was held at the London Tavern, on Monday, Capt. MAUDE in the chair.

The notice convening the meeting having been read, a balance-sheet, from the formation of the company (Sept. 12, 1862) to June 30, 1863, as audited by Messrs. Cooper Brothers and Co., public accountants, was presented, from which the following is condensed:—

Dr.—30,290 shares, issued at 2l. 10s. each, 1d. paid	£30,290 0 0
Accounts due by the company	227 5 5 = £30,507 5 5
Cr.—Purchase of the mine	£25,000 0 0
Sundry expenditure	3,212 4 0
Due at bankers	712 10 8
Due to the company	1,584 10 0 = 30,507 5 5
Available balance, 2295l. 9s. 8d.	

The report of the directors stated that they had great pleasure in announcing that, in addition to the St. David's mine, they had purchased the right to wash and search for gold in the alluvial deposits on the banks of the River Mawddach, from Pen-maen pool to the estuary at Barmouth. Although they have, and always have, every reason to believe that the mine is one of the best, if not the best, in Wales, and that time and machinery were the only things requisite to make it a highly remunerative property, yet the directors felt that the opportunity offered to them of obtaining the river washings on advantageous terms was one which they had no right to lose, as the returns were likely to be more immediate and very large. Since the purchase was effected much has been done in the way of prospecting and testing the value of the newly-acquired property, and the directors believe the shareholders will be perfectly satisfied when they are fully prepared to present an account of the results. The Elisebeth lode is most promising in appearance, and will, there is every reason to believe, when reached at greater depth by the level now in progress, prove to be one of the richest gold lodes in Wales. Other lodes on the property are likely to prove remunerative; but it has been thought advisable to give the above-named lode the preference. The directors have carefully abstained from laying out large sums of money on untried machinery, and have deemed it advisable to wait as long as possible, in order to be guided to a certain extent by the experience of other mines in the neighbourhood; they think, however, that it will be expedient shortly to erect some. As regards the washing of the cost of commencing operations so as to be able to take all the soil down to the rock for a distance of at least 150 yards, is estimated at less than 60l., and the greater part of that estimate is for launders, &c., which will be equally available in other places.

Several reports were also submitted. Amongst others, that of Mr. E. J. Bridell (a director), which, referring to the river washing, stated that he believed it would be necessary to operate on large quantities of alluvial sand, for which sluices can be made on the spot, at a cheaper rate than elsewhere, as the machinery and all the implements required are of a simple kind, and will be easily made under superintendence. He visited the places on the banks of the River Mawddach, where Mr. Pugh has been successfully engaged in searching for gold, with a view to operations, and in one place he saw the soil taken from a depth of between 3 and 4 ft., and fine gold was visible in the residuum, and also in particles weighing about a quarter of a grain. He had no doubt that, as soon as they could reach a sufficient depth by damming out the water, the results will be most satisfactory.

The report of Mr. David D. Pugh stated that the results of the numerous trials he had made on the St. David's Company's ground on both banks of the River Mawddach down to Pont Dda is that he had found gold in the sand in most places from the ferry downwards. The samples he sent up to the company's offices in London, which were assayed by Messrs. Griffiths and Barton, yielded gold in paying quantities, though only found at the surface. He had found gold in nearly all the samples he had washed. There cannot be any doubt but that the profit on the washings will be very large—in fact, that the diggings are good, and will undoubtedly increase in value when they can be got down to the bed rock. They would require a few wooden pumps, which can be made at Dolgelly cheaply, and he should recommend that the sluices should be made on the spot. They will cost very little money, and be much cheaper than anything which can be sent down from London, and will answer the purpose better also, as what is required to make the washings pay is to pass large quantities of soil through the sluices.

The report of the manager (Capt. Thomas Pugh) stated that up to the end of August the total quantity of ground driven through by the present company had been 358 ft.; and excavations—open cuttings, prospecting, and trial-pits—to the extent of 456 yards. When, considering the hardness of the rock, the expensive transit of materials, and other disadvantages connected with mining in this district, he was confident the above statement cannot be otherwise than satisfactory, and will give the shareholders to understand that the money has been spent in properly developing the mine. It is true they cannot boast of a catalogue of patents such as Bedan's, Britten's, and Mosheim's pans; but the time has arrived when the prospects call for the erection of machinery of some kind, in order to ascertain, through practical operations, the real value of this property. The directors, he believed, were not in a position to erect a stamp; he believed to be one of the best, if not the best, that can be erected for the pulverisation of quartz, as it is both inexpensive and effective, and, until something else was found out, he was of opinion that, with all its faults, it will be adopted still. It answers abroad; why not at home? In Marlborough county, California, 100 tons a day are passed through stamps, without any complaints whatever as to its merits, full reliance being placed upon the quantity the stamps is able to crush to produce a paying amount of gold. What would some of the gold mines in Wales pay if 100 tons per day were operated on, and the produce turned into gold? Why, Clogau would before now have proved the richest concern in Wales, and the silver mines would follow in succession. It is quite absurd to anticipate the failure of gold mining in Wales, or with the machinery had speculations, for the simple reason that, comparatively speaking, nothing has as yet been done towards its development, and the machinery erected so far has failed to do what is required—to pulverise sufficient to make the mines pay; and until sufficient machinery is erected, and the quantity of quartz operated upon, they might expect to hear nothing but a continuance of the present cry, condemnatory of gold mining in Merionethshire. For his part, he saw no reason to despair of realising successful results. He doubted not but that the present state of affairs connected with gold mining in Wales may have caused the minds of some of the adventurers to waver; but this does not prove that there is no gold in Wales, and that the day is not far distant when the machinery will be erected, the non-paying mines will be made to pay, and victory crown their endeavours. Out of the numerous lodes discovered in this property, there is not one but what contains gold, and he must say that better indications as to gold-bearing quartz cannot be found in this district. The prospects of the mine warrant a spirited trial, and the chances of success are truly encouraging. He saw no reason to alter their plan of working; their future operations must be of the same kind as the past—driving, sinking, and discovering lodes. In the meantime, he must beg to call attention to the building of miners' cottages, and the erection of machinery. In consequence of an unfavourable weather, their preparatory work for river mining has been very slow indeed. In fact, until the weather gets more settled nothing can be done towards building a dam across the river, and taking up the water. A month's fine weather would be sufficient to test the value of the undertaking, and determine the basis of future operations. The trial-shaft, named in his last report, is down 9 feet, without any apparent sign of the bed rock, and in consequence of the influx of water, they have been obliged to suspend operations as to any deeper sinking. He sent a sample of sand, taken 9 feet below the surface, which it will be found contains gold. He believed when they were fairly at work the result will be satisfactory, and river mining turn out to be a profitable investment.

The CHAIRMAN said that the various reports which had been presented to the shareholders contained all the information the directors had to communicate; but he might mention that Capt. Pugh had presented a paper, and also a plan of the mine, and that, with the view of initiating discussion upon the various points advanced in those reports, he would move that the report of the directors and balance-sheet be received and adopted. Mr. CUBACK (a director) seconded the proposition.

Mr. W. W. GORDON wished to make a few remarks before that proposition was put to the meeting. In the first place, he would refer to the fact that the directors were entitled by the Articles of Association to 500l. per annum as their remuneration, which he thought was too large a sum for a company like this; and he also thought that the preliminary expenses were heavy. And, in the next place, he wished to know how many shares were paid for by the public? The SECRETARY replied that about 18,000 had been taken up and paid upon. He then read a list of the shareholders, and produced the bankers' book.

Mr. GORDON was proceeding to state what Mr. Evans, Mr. Seabry's late clerk, had told him, when he was called to order by the Chairman and meeting; whereupon Mr. Gordon concluded by moving an amendment, that the meeting be adjourned till September 9, and that, in the meantime, the books and accounts be placed in the hands of a public auditor, to be appointed by the shareholders.

A PROPRIETOR could not see what possible object there would be gained by incurring the expense of engaging another public accountant, seeing that the accounts had already been examined by Messrs. Cooper Brothers, public accountants, who had certified to their correctness. If there were any positive proof that the accounts were not correct, then there would be some reason why they should be audited by another public accountant; but no such proof had been adduced, and, therefore, to pass such an amendment as that proposed would be to cast a reflection upon the auditors who had audited the accounts, and, at the same time, incur an unnecessary expense.

Mr. EDWARDS said that by the Articles of Association the directors were empowered to pay 1000l. for the promotion of the company.—The CHAIRMAN said that, while the Articles of Association gave that power, not a shilling had yet been paid.

The CHAIRMAN, at the request of a proprietor, read the list of preliminary expenses. Mr. EDWARDS wished to know at what cost the right to the river washing had been obtained?—The CHAIRMAN said that the total cost would be 2500l.

Mr. SEABRY said he had several times tried the washings himself, and each time had found gold; he fully believed it would prove remunerative. But Capt. Pugh was present, who would be glad to afford shareholders every information upon this or any other point connected with the undertaking.

Mr. EDWARDS said that the directors' report stated that they "have carefully abstained from laying out large sums of money on untried machinery, and have deemed it advisable to wait as long as possible in order to be guided to a certain extent by the experience of other mines in the neighbourhood—they think, however, it will shortly be expedient to erect some;" but Capt. Pugh's report states "that whenever the quartz shall have been practically and thoroughly tested with efficient machinery, the adventures shall be agreeably surprised when they hear of the results."

Mr. SEABRY said, he believed they would, and very shortly. No one had such an interest in the success of the undertaking as he (Mr. Seabry) had, nor had anyone taken upon himself such a degree of risk, and, for these reasons, he should have most strenuously objected to the incurring an outlay of between 25,000l. and 35,000l. for machinery—as had been the case upon a neighbouring property—without having obtained any result. Their policy had hitherto been to wait, and see what was being done at other properties, and take advantage of the results. (Hear, hear.)

Mr. EDWARDS: If the staff had been found, why not erect suitable machinery?—Mr. SEABRY: That is just the difficulty to know what is suitable machinery; but still he thought they now knew which was the most suitable machinery. By this course, they had been saved from the expense and annoyance of having adopted speculative inventions, productive of results anything but satisfactory. He mentioned that some one had been taken from the Elizabeth lode, which was sent to the assayers for the Bank of England, by whom it was proved to contain 47 ozs. of gold to the ton. All he could say was, if they did not know how to get the gold out, it was not his fault.

Mr. EDWARDS having seconded the amendment, the question was put, when the amendment was lost by a large majority. The resolutions were put and carried.

Mr. A'BECKETT enquired of Capt. Pugh if he thought the undertaking would produce profits?—Capt. PUGH said there could not be the shadow of a doubt upon that point; he had tested samples of the ore from each lode, and there was not a lode in the property that did not contain traces of gold. As regards the river mining, all he could say was that the deeper they sank into the soil the more plentiful the gold became. Last week he took some sand from a depth of 9 feet, and found gold; and he believed when the rock was reached gold in paying quantities would be found. There was no question that the company possessed a very valuable property. He certainly saw no reason in supposing that the Vigna and Clogau property contained all the gold-bearing quartz in Wales. An outlay of 600l. would prove the river washing.

The directors, having retired, were unanimously re-elected, and a discussion arose as to their remuneration, when they stated that, if it were the wish of the shareholders, they would not accept any further remuneration until dividends were paid; but it was suggested that the matter should be left in the hands of the directors, that they should, for the present, receive half the amount to which they were entitled under the Articles of Association; the latter suggestion seemed to meet with general approval.

Mr. HAMILTON thought it would be very desirable if a distinct statement could be given with respect to the results that would accrue from the river washing.—Capt. PUGH said their operations in that respect had been delayed by the wet weather; they were only waiting for the launders, so as to take up the washings dry.

Mr. HAMILTON thought that it was a pity the statements relative to this matter had not been less emphatic.—Capt. PUGH said it was nothing but the weather that had prevented the immediate proving the washings.

Mr. HAMILTON enquired when the purchase-money for the right to the river mining would be paid?—The CHAIRMAN replied that the time for the purchase-money to be paid extended over a year, and a great deal depended upon the success of the company.

Mr. EDWARDS hoped the directors had made the company secure with respect to the river mining.—The CHAIRMAN said the company had been made perfectly secure.

Messrs. Cooper Brothers, public accountants, after stating, in reply to former remarks, that they had carefully examined every voucher before certifying to the correctness of the account, were much obliged to the auditors of the company for the ensuing year, and voted of thanks to the Chairman, directors, and secretary.

The CHAIRMAN acknowledged the vote in appropriate terms.—Mr. SEABRY, having also thanked the meeting for the compliment, stated he could not say that he gave this company his attention solely for the benefit of his fellow-shareholders, for he really did it for his own welfare, having a much larger stake in it than anyone else; but, at the same time, while he did his utmost to promote his own welfare, his co-shareholders could not fail to be benefited, inasmuch as the whole of their interests were identical. (Hear, hear.)—The proceedings then terminated.

GREAT WHEEL BUSY MINING COMPANY.

An ordinary general meeting of proprietors was held at the company's offices, Austinfriars, on Thursday, Mr. J. FIELDING in the chair.

Mr. E. KING (the secretary) read the notice convening the meeting, and the minutes of the last were read and confirmed. A statement of accounts, ending with costs for June, was submitted, from which the following is condensed:—

March mine cost, merchants' bills, &c.	£1728 8 11
April ditto	2337 16 9
May ditto	2378 2 11
June ditto	2333 2 3 = £9777 5 10
March tin and copper sold	£2460 15 5
April ditto	2372 2 6
May ditto	2403 6 3
June ditto	2342 8 9
Arsenic	22 17 6
Old materials	60 17 10 = 9471 8 3
Leaving loss	£205 17 7

The balance against the mine was 1811, 11s. 3d.

The report of the agents was read, as follows:—

Sept. 2.—Since the last meeting of the adventurers we have cut ground in the 130, at Harvey's engine-shaft, for bearers, elsters, rods, &c., and fixed a standing drawing-lift, making complete for sinking to the 140; the said shaft is now sunk 3 ft. below the 130—the lode is 2 ft. wide, worth 8l. per fm. The 130 is extended east of this shaft 14 fms.—the lode in this level has averaged from 4 to 5 ft. wide, and from 35l. to 40l. in value; in the present end it is 6 ft. wide, worth 30l. per fm. The 130 is driven west of Offord's shaft 3 fms.; the lode is 4 ft. wide, worth 20l. per fm. We hope to communicate this level with the 180, east of Harvey's, in about two months. We shall then commence to sink Offord's shaft below this level, when the lode is 3½ ft. wide, worth 25l. per fm. The 130 is driven east of Offord's shaft about 3 fms.; the lode is 8 ft. wide, worth 40l. per fm. The 120 is extended 45 fms. east of Offord's shaft; the lode is small, producing a little tin, but not to value. No. 2 winze is sunk 4 fms. 2 ft. below the 110, east of Offord's; the lode is 1 ft. wide, worth 6l. per fm. for tin. The 110 is extended east of Offord's shaft 92 fms.; the lode is 3½ ft. wide, worth 8l. per fm.; this end is now within 8 fms. of Mathews's shaft, with which we hope to communicate in about three months from this time. Mathews's shaft is now sunk 9½ fms. below the 100; the lode is discovered by the elvan. Nicholls's winze is sunk about 7 fms. below the 100, east of Mathews's—the lode is 6 ft. wide, worth 25l. per fm. The 100 is extended east of this shaft 22 fms.—the lode is 1½ ft. wide, at present unproductive. The 100 is to sink 81 fathoms west of Fielding's shaft; the lode is very small. We have driven a cross-cut south of this end, and cut the kills, but no more lode. We have now decided to drive north to ascertain if any more remains in that direction. Jenkins's winze is sunk 3 fms. below the 90, east of Mathews's; the lode is 4 ft. wide, producing a little tin, but not to value. The 70 cross-cut is extended 105 fms. north of King's shaft, but no lode yet intersected. Vivian's winze is sunk about 3 fms. 2 ft. below the 50, west of Black Dog shaft, on the north part of the lode, which is composed principally of gossan and spar, with a little ore, having a very kindly appearance. There is a considerable portion of the lode still standing to the south, which we purpose sinking a few fathoms to cut through, and ascertain its size and character, having a very promising lode in the 50 for a great many fathoms in length. In conclusion, we beg to say, taking the prospects of the mine as a whole, that we consider them much the same as for the past four months; and, should the price of tin and copper remain as at present, we estimate the returns to meet the current cost for the next four months. The prospect in the bottom of the mine is encouraging, but it will take some little time before the ground can be brought into proper working order.—T. TRELEASE, J. FETTERICK, E. RICHARDS, W. TRELEASE.

The CHAIRMAN said the report just read entered so fully into the position and prospects of the mine that remarks from him were unnecessary; but, at the same time, he felt there were good grounds for congratulating the shareholders upon having at last arrived at the turning point, as the present was the first occasion for the last seven years that a profit was not made. He thought they would now have occasion to cut through, and ascertain upon their past career, and be well remunerated for their outlay. He could only say that he hoped and believed the report would be verified, and that calls would no longer be known in Great Wheel Busy.

The SECRETARY, referring to the financial position of the company, stated the total cost for March amounted to 2728l., against a return of 2260l., which left a loss upon that month's operation of between 400l. and 500l.; but during the three subsequent months there had been realised a profit of 300l., which reduced the loss upon the four months to less than 200l., which was the total debit balance at the end of June. Putting the costs against the returns for the following month, there was left a profit of 120l. or 130l.; if during the next three months the same result was realised, the accounts at the next general meeting would show a good balance in favour of the mine. He might also inform the shareholders present, that each month's costs were placed against the same month's returns, so that the result of each month's operations could be seen at a glance.

Mr. ROWLANDS thought it would be satisfactory to the meeting if Mr. King would point out by the section the run of tin ground discovered at the bottom of the mine.

The SECRETARY stated that in the section received from the dialler all the ends and winzes were marked up to the present time. It would be seen that the engine-shaft, in sinking below the 130, had passed into a different formation, the lode changing from copper to tin. In some parts of the shaft the lode had been worth from 30l. to 50l. per fathom. The 130 end had been driven east 14 fms., through a lode of tin, in some places worth 70l., but averaging from 35l. to 40l. per fm. Offord's shaft, which was 15 fms. still farther east than the above point, was in a good lode of tin, worth from 25l. to 30l. per fm. The 130, going east of Offord's, was in a course of tin, worth 40l. per fm.; and the engine-shaft was also in the same run of tin. By this it would be seen that the tin ground already discovered was from 30 to 35 fms. in length; there being no level between the 110 and 130 fm. levels it was impossible to estimate the amount of reserves in this piece of ground. Coming to its present position with other great mines in the country, there was every reason to assume—basing the assumption upon analogy—this property becoming one of Cornwall's greatest tin mines; or, to use the words of the agent, "there seemed very little doubt that by pushing operations with all speed in the bottom of the

cooling, rectifying, searching, and strengthening properties of the well-known ointment, and these justly esteemed pills. Their accompanying directions will enable everyone to apply these remedies to the best advantage, and no one need fear that any evil will result from the adoption of Holloway's purifying treatment, provided the diet be regu-

Mining Correspondence.

Mining Correspondence.

BRITISH MINES.

Uran. Sept. 9: The 60 west of Beerman's is worth 30¢

EAST PROVIDENCE.—T. Uren, Sept. 3, 1903. The 65' west of Boorman's, is worth 20% per fath.; the same level east is worth 10% per fath. The slope in the back of this level is 100 ft. wide, worth 10% per fath. The 100 ft. wide, is worth 10% per fath. We are progressing favourably with the cross-cut north at the 70'; I think we are getting near the lode here, as the water is flowing freely from the end.

EAST ROSEWARNE.—John James, Sept. 3. At Hallie's shaft the lode is 9-in. wide, worth 141 per fath. for length of shaft—10 feet. In the 65 east the lode is small and poor. In the 65 west the lode is small, but looking more promising, with occasional stones of ore. In the sump-winn the lode is 1 ft. wide, worth 20% per fathom. In the

25 west, the lode is 1 ft. wide, worth 147. per fathom. The stops are much as last reported. We are making good progress with King's shaft.

EAST TREKERRY.—J. Nancarrow, Aug. 31: There has been no alteration of importance since last reported. Everything has been continued without intermission, and since the new lift has been put to work the men are getting on well in clearing east shaft.

EAST WHEAL FORTUNE.—R. Roberts, Sept. 5: The shaft is being driven to the level of the 100 fms. and the men are now cutting a trial, preparatory to driving east on the lode, which we hope to commence in a fortnight.

EAST WHEAL GRENVILLE.—G. R. Odgers, W. Bennett, Aug. 29: The engine-shaft, below the 65, by nine men, at 371. per fm. No lode has been taken down since our former advice. The 65 east, to four men, at 31. 10s. per fm.; lode full 3 ft. wide, producing some very nice ore, worth full 3 tons per fm.; at this level we have driven, including length of shaft, 14 fms., on a very pretty looking lode. The 65 west, to four men, at 41. per fm.; lode 2 ft. wide, a kindly lode, worth from 1 to 1½ ton per fathom. The cross-cut to drive south of the main lode, at the 56, by four men, at 31. 10s. per fm.; here we are expecting to intersect the middle branch in the course of another fortnight. The cross-cut to drive north, by six men, at 31. 10s. per fm.; we have about 10 fms. more to intersect the north lode, and which we think will take six weeks or two months, and which is a splendid speculation. The stop above the 45, east of the shaft, by four men, at 11. 15s. per fm., worth from 8 to 101. per fm. A stop below the 45, west of the shaft, by two men, at 11. 15s. per fm.; lode worth full 81. per fm.—North lode: The 45, east of cross-course, to two men, at 41. 10s. per fm.; lode 15 in. wide, and worth full 1 ton per fm.; this is a kindly lode. The 45, west of cross-course, to four men, at 51. per fm.; lode 2 ft. wide, and worth full 1½ ton per fm., also a kindly lode.

—G. R. Odgers, W. Bennett, Sept. 5: There is no alteration in the 65 east, on the main lode, or in the shaft, since the 65. The north lode, at the 45 west, is from 18 in. to 3 ft. wide, and producing full 2 tons per fm.; this lode as we get away from the cross-course is improving. No change in the 45 east since Saturday. In the 65 cross-cut south we have met with some very nice ore, indicating that we are approaching the middle branch; this is a favourable symptom.

EAST WHEAL LOVELL.—J. Burgan, Sept. 2: The lode continues to improve both in sinking and at the 26. In the shaft below the 26 the lode is worth considerably above 1001. per fm., and in the back of the 26 the lode is worth over 1201. per fm., with every prospect of continuance, and great profits to the adventurers. Our tin sales will be great than we anticipated.

EAST WHEAL RUSSELL.—Jas. Richards, Sept. 2: In Homersham's shaft, sinking below the 120 fm. level, the progress is slow, owing to the hard nature of the ground.—Homersham's shaft: In Vigus's cross-cut north, at the 120 fm. level east, the north lode is cut into 9 ft. It is composed of capel, fine gossan, quartz, prlan, and a little ore; but as yet no north wall is reached. In the 120 fm. level east, and east of Vigus's cross-cut, on the south part of the lode, 4½ ft. of the lode is being carried, and is exceedingly promising, being composed of capel, munde, quartz, prlan, and ore, worth full 121. per fathom. In the bottom of the 110 fm. level, a new winze, 4 fms. west of Soper's cross-cut, on the south part of the lode, is commenced, in which the lode is worth 81. per fm. In John's winze, below the 100 fm. level east, on the north part of the lode, the lode is 2½ ft. wide, and unproductive. This winze is suspended, and the men are removed to sink the new winze referred to above. In Hooper's rise, in the back of the 85 fm. level, on the north part of the lode, west of Mollard's cross-cut, the lode yields a little ore. In the 45 fm. level east the lode is large, 5 ft. wide, and fine stones of ore are being obtained therefrom. In Harvey's rise, in the back of the 45 fm. level east, the lode is composed of flookan, peach, quartz, and, occasionally stones of ore. In Williams's cross-cut north, at the 85 fm. level west of Hitchens's engine-shaft, the ground is rather hard and slow for progress. We sampled, on Friday last, 216 tons of ore.

FRANK MILLS.—J. P. Nichols, J. Cornish, Sept. 2: We have commenced to take down the west lode, in the 100 north, but have not yet seen enough of it to state its size or value. The ground in the south end, on this lode, is much the same as for some time past, but there are now branches forming in it, producing saving work for lead. We shall, however, soon commence to take down the lode in this end also. The east lode, in the 100 south, is about 2½ ft. wide, consisting of barytes, munde, and lead ore, yielding ¼ ton of the latter per fm. We have extended the cross-cut east from the 72 north, on west branch, about 2 fms., passing through numerous branches of white iron, quartz, jack, and lead ore, worth of the latter 3cwt. per fm. The lode in the stopes in back of the 60 north is 9 ft. wide, yielding full 1½ ton of lead ore per fm. The winze sinking in bottom of the 45 east, is quiet so far, and is yielding ¼ ton of lead ore per fm. We have commenced to commence to sink against this winze from the 60, and we hope to effect a communication here in a week or ten days. The tribute pitches are without change to notice. A more detailed report shall follow next week for the general meeting.

GARLINDA UNITED.—J. Rowe, Sept. 1: We set a cross-cut to drive north of Plover's shaft, and one south to intersect Basset and Grylls and other lodes, on Friday last. We do not expect we shall have many fathoms to drive to intersect one of these productive lodes. The cross-cut to intersect is driven 12 fms. from the shaft, and we may daily expect to cut the lode; ground favourable for driving. In the old mine we have 16 men stopping; these are breaking about 3 tons of tin per month.

GLATTON.—Geo. Rowe, Aug. 29: The new engine-shaft is down 16 fms. below the surface; which is progressing as fast as the nature of the work will admit. The engine, pumps, &c., are all engaged in erecting the steam-engine. The main beam, cylinder, and boiler are all fixed in their proper position, and no time will be lost in getting the whole of the machinery in motion. We have been enabled to fork the water several fathoms below the 36, and hope in a short time to have sufficient water-power to resume operations on the lode, after which we shall again be in a position to keep up our regular returns.

GOGGINAN.—Sept. 1: The lode at the 100, going east from Gilbertson's shaft, is without any alteration in notice since last report, still a large and strong lode, without strong ore, and letting out a great deal of water. The lode at the 80, west of Bryn Pica shaft, is 3 feet wide, rather soft, but producing good stones of ore at times. Nothing has yet been intersected to notice in the cross-cut south at the deep adit level, west of Bryn Pica shaft. The tribute pitches at the different levels in the old part of the mine, six in number, are yielding on an average 10 cwt. of lead ore per fathom. We are progressing well with the work at level Newd, and have commenced to sink the shaft below the deep adit level.

GREAT BRIGAN.—T. Trelease, J. Edwards, Aug. 29: We have not yet intersected any lode in either of the cross-cuts north and south of the engine-shaft; ground much the same. The lode in the 42, driving east of Tom's shaft, is 1 ft. wide, producing a little copper ore, but not of much value; the lode in this level, east of Trelease's shaft, is 15 in. wide, yielding a little ore, but not to value; the lode in this level, driving west from Hilda's shaft, is 18 in. wide, worth 167. per fm. The lode in the winze sinking below the deep adit level, is now 20 in. wide, worth 41. per fm., of a kindly appearance. We have commenced to drive a cross-cut south at this level to prove if there is any other lode standing in that direction. We are making fair progress in cutting down High-burrow shaft at the different levels.

GREAT DAREN.—R. Williams, Sept. 2: The stopes in the back of the 10 has a little improved for the lode, while for lead and copper the stopes are of good paying quality. The stopes in the back of Good level produces some good ore, but has undergone no change lately worthy of notice. We are putting the shaft in order for drawing with a small force, as we have not been able to get the planks sawn, owing to press of work at the saw-mill, but hope to have them in a day or two. In the meantime, the men who would have been in the shaft are in the stopes.

GREAT NORTH DOWNS.—T. Trelease, Aug. 29: The lode in the 87, west of Vian's engine-shaft, is about 8 ft. wide, yielding a little copper ore, but not of much value; the lode in this level, east of said shaft, is 2½ ft. wide, worth 41. per fathom; the lode in this level, west of Jenkins's shaft, is 18 in. wide, spotted with ore, but not of much value. The lode in No. 2 winze sinking below the 47, west of the engine-shaft, is a little improved, being 2½ ft. wide, worth 71. per fm. The lode in the winze sinking below this level, east of Jenkins's shaft, is 2½ ft. wide, worth 61. per fm. The lode in the stopes in bottom of the 60, west of River shaft, is worth 81. per fm. At the bottom of Job's shaft, which we shall now name the 65, we have cleared east of said shaft about 20 fms., and find the lode in the bottom from 6 to 15 in. wide—a good branch of ore, of very good quality, and worth about 151. per fm. The men who have been engaged in clearing the bottom will commence on Monday, and will then at once commence sinking shaft for the 75 with all possible speed. We have not yet completed the stand and shelves at the 60, for the purpose of draining Cock's shaft below the 55, where it is said a good bunch of ore was left by the old workers.

GREAT RETALLACK.—Wm. H. Reynolds, Sept. 1: In the adit end, west of No. 2 shaft, we have just cut a kind of capel, mixed with gossan, munde, and copper; we shall see more of it in two or three days, and write you again.

GREAT SOUTH TOLGUS.—J. Daw, Sept. 2: The lode in the 154, west of Lytle's shaft, has improved in the past week, and is now worth 401. per fm. for tin.

GREAT WHEAL RABBERN.—J. Hamilton, John Jenkins, August 31: We have nothing new to communicate from Hill Brothers shaft since last report; we prepare to drive cross-cut on Monday next. The 12 east, on the tin lode, is looking much as usual. The 20 is in fork, and we have been west of the stamps about 75 fms., and are much pleased with the appearance of the tin lode. We are about to drive a short cross-cut from No. 2 shaft to the old level, to ventilate the western part of the mine, when much tribute ground will be at once available. The tribute department is looking much as usual. We intend to light the fires in the burning-house to-morrow, or on Monday next. The stamps are working well.

GWYDYR PARK.—W. Smyth, Sept. 5: We have not taken down any lode in the rise in back of Gwydyr Park deep adit this week, therefore I cannot report any change. I have again set the rise to four men, at 91. per fm.; stent for the month, or hole to the middle level. I am driving north in Gwyn Llion deep adit, on the branch we cut some time ago; it is more open than it has been; it is at present about 8 in. wide, composed of spar, gossan, blende, and spots of lead ore; as it is improving I have set 1 fm. more to it six men, at 61. The lode in the Red lode shaft is improving; at present it is about 18 in. wide, composed of blende, gossan, and strong spots of lead ore; the sinking has been impeded of late in consequence of the heavy falls of rain, and if we had not the drains made to carry off the surface water, it would be still; I have again set the sinking to six men, at 91. per fm.; 1 fm. stent, the reason I did not give them a longer stent is because I am expecting the ground to improve. We have found the Rhafus lode in the shode pit, near the boundary of our set; it is about 1 foot wide; it seems to be running further through our set than I expected.

HARWOOD.—J. Race, Aug. 31: At our setting the level is set to drive east at 57s. per fathom. The end of the drift east in the vein is poorer. We are stopping the vein east of No. 3 rise; it is set to two men, at 30s. per fm., worth 1 ton of ore per fm. We are driving the drift in the west end; it is set to two men, at 54s. per fm., and stopping down the back to two men, at 45s. per fm.; each place is worth ½ ton of ore per fm. We have 8 or 9 tons of ore, dried, and muddled on the floors.

HAWKMOOR.—J. Richards, Sept. 1: West Hawkmoor: No. 3 lode, driving west, is 1 ft. wide, composed of quartz, capel, and good spots of tin ore—a very promising lode. The lode in the rise in the back of this level is 2 ft. wide, composed of peach, capel, munde, and good work for tin ore. Good progress is being made in sinking the shaft, and the lode is of a promising character. Having sufficient water now to keep the mine in fork to the 20, the men have resumed their pitches.

HINGTON DOWN CONSOLS.—T. Richards, Sept. 2: No important alteration has taken place in the mines since the report for the general meeting. The sampling for our next sale of ore is completed at 410 tons.

HOLMBUSH.—R. Pryor, T. Woodcock, J. Bariss, Aug. 29: The pitch in bottom of the 175, east of shaft, has improved; the lode is worth 151. per fm. The lode in bottom of the 170, west of No. 2 winze, from the 160, and west of the lead lode, is worth 301. per fathom; this being stopped by 12 men. The tribute pitches in back of the 160 are looking much the same. The lode in the 80, west of Hitchens's shaft, and west of the lead lode, is improving as we get off from the influence of the lead lode; the lode is yielding good stones of copper ore, with a promising appearance. We have communicated the rise from the back of the 30, on Jack-lode, to tributes' bottoms, and have taken two of the men, and the rest of the men, which will be six, so as to push it on as fast as possible. The winze, &c., is completed for drawing at the eastern part of the mine, and we shall commence clearing up Holmbush old engine-shaft next week. We are getting on favourably with the drawing, &c., for the sampling, which will be about 160 tons of copper ore.

KELLY BRAY.—S. James, Sept. 2: The lode in the rise in the 95 east is about 1½ ft. wide, producing a quantity of munde and good stones of ore, opening tribute ground. The lode in the 25 east is getting into a more settled state since we have passed through

the large run of gossan which was met with at the above point, and disordered the lode; it is now producing good stones of ore, and the ground easy for progress, showing indications of an improvement ere long. The tribute department is looking a shade better than for some time past.—Eastern Mine: The lode in the 70 is looking promising to improve; it is now carrying a leading branch on the north or footwall, composed chiefly of quartz and munde, and all the end from 3½ to 4 ft. wide is strongly mineralised, with branches containing quartz, munde, and rich spots of copper ore dipping towards the north or footwall part of the lode. We sampled, on Aug. 28, 151 tons of ore (computed).

LADY BERTHA.—Capt. Harpur and Methwell, Aug. 29: To-day is our pay and setting, which has passed off all right, and particulars of which will be forwarded to you. Since our last report no material change has taken place in either of the ends or pitches to call forth any remark on the present occasion. The character of the ground in the new shaft is without change.

LADY BERTHA.—Capt. Harpur and Methwell, Sept. 3: In the 53 west we are just now cutting into the lode; so far as seen it is composed of quartz, iron, munde, and stones of ore. Since our last report we have effected a communication with the winze sinking below the 30 east and the rise above the back of the 41, and have commenced stopping the bottom of the 30, west of the mid winze, where the lode is from 2 to 3 feet wide, composed of quartz, munde, and ore, worth of the latter 3 tons, or 91. per fathom. The lode in the 30 east is 1 ft. wide, consisting of peach, prlan, and munde, with a little water issuing from it. In the 20 east the lode is 5 ft. wide, composed of munde, quartz, and peach, intermixed with stones of ore. The tribute department is yielding much the same as for some time past. There is no change to notice in the new shaft. We are pushing on the sinking as fast as possible.

MAUDLIN.—J. Tregay, Aug. 29: Sump-shaft: We have got the north wall at the 70; the lode here is 18 ft. wide, composed of munde and copper ore. We shall commence driving east and west on the north part of the lode on Monday.

MINERA UNITED.—J. Richards, Sept. 5: The new shaft is down 8 yards below the 60; the ground continues much the same as for some time past. The 80 north progresses satisfactorily; the lode is 3 ft. wide, of a highly promising character, producing a little lead, and letting out a quantity of water. The lode in the stopes in the back and side of this level is worth 10 cwt. of lead per fm.—Williams's shaft: The lode in the 40 is worth 15 cwt. of lead per fm. The pitch in the back of this level is worth 8 cwt. of lead per fathom. There is no alteration in any other part of the mine since my last.

NANGLES.—J. Rowe, Sept. 2: We have been sinking the engine-shaft on the north lode, leaving the south one standing. The north lode is 4 ft. wide; a part about 18 in. wide, close on the north wall, contains some rich quality copper ore, mixed with munde; this lode is now worth for copper 121. per fm. for the length of shaft; 2½ ft. of the lode is mixed with very kindly quartz, munde, and copper. The north and south lodes, in the shaft, are separated by a wall only; they appear up to the present time to be going on parallel. The last taking down of the south lode was worth 501. per fm. for the length of shaft. I see no signs of its falling in value, taking the two lodes; I call the shaft to be worth full 601. per fm.; it never looked so promising as to-day. We shall take down the south lode before the week is out. The 86, east of Bread and Cheese shaft, and on the same lode, which has just come into engine-shaft, is worth 201. per fm.; this end is 40 fms. west of the engine-shaft, and near 10 fms. above the bottom of it. Nothing new to report on in any other part of the mine.

NANTEOS.—R. Williams, Sept. 2: There is nothing new to report, from the fact of our having been driving by the side of the lode all the month. We shall take it down next week, when the result shall be reported to you. I may mention that there are some strings and spots of ore in the rock we are driving through, which seems to indicate a good lode. The south of the lode also shows spots of ore as we pass on, and I hope to find on taking it down an improved piece of lode.

NANTY.—Aug. 31: The lode at the roadway level, going north of boundary, is large, and of a promising character, yielding a little ore, but not to value at present. The lode at the 10, north of boundary, is 6 ft. wide—a very kindly lode, showing strong spots of lead ore and letting out a great quantity of water, which is a favourable indication; this point is being pushed on with all possible dispatch by six men. The stopes over this level, three in number, are producing on an average 14 cwt. of lead ore per fathom. The lode in the deep adit level, going north of boundary, is 5 ft. wide, producing a little ore, but not to value, and still letting out a large quantity of water; this point is being pushed on by six men. The stopes over this level, four in number, are producing on an average 12 cwt. of lead ore per fathom. The dressing, with all other surface work, is progressing favourably. We are getting on well with the cutting down and widening of the roadway level. We hope to sample about 112 tons from this time at our next sampling day.

NETHER HEARTH.—Wm. Vipond, Aug. 28: There is no change to notice in the end of the level this week; the men have driven the last month 6 fms. 0 in. 6 in. of ground; we are now about 15 fms. from the next east and west vein.

NEW CROW HILL.—R. Hancock, S. Collins, Sept. 1: We have cross-cut the lode at the 55, and find it 6 ft. wide, producing good work for lead and munde, of a kindly appearance. The lode in the 35 end is producing just the same quantity of lead per fathom as last reported; we shall recommend the stopping of this end after this month for this reason—we have the backs from the 55 coming up to this end in a few months, which will be the cost of driving the same, and put the same expense to stop the lode away over this end. The two men in the 35 are yielding just the same quantity of lead ore as last reported. The stopes in back of the 35 are producing good work for lead and munde, of a promising appearance to last. We have put two of the 35 fm. level end-men to cross-cut this lode at the 15, which is to the south of this, according to the dial; this will throw great light on the upper levels when the lode is cut. We shall sell about 12 tons of lead this week, and had it not been for the dry weather it would have been more.

NEW TRELEIGH.—S. Mitchell, Sept. 2: Friday last was our setting-day, and the following are the bargains let:—A rise in back of the 90, east of Carr's engine-shaft, six men, at 71. per fathom; this rise is going up under the ore ground gone down in the 60. A stop in back of the 50, east of Carr's shaft, by four men, at 61. per fm.; the lode is worth 2 tons of ore per fathom. A winze to sink below the 70, 15 fms. below the above stop; the lode here is large, and looking very promising, but shall be able to report more fully on its value next week. The 70, west of Carr's, by four men, at 61. 10s. per fathom; the end is very wet. A rise in back of the 70 east towards Good Fortune, by two men, at 81. per fathom. A winze to sink below the 50, west of engine-shaft, by two men, at 61. per fathom. The 70, west of Symon's-shaft, by four men, at 71., and to be allowed 61. for taking down the lode, 4 fathoms long. A stop in back of the 60 by two men, at 41. per fathom; this stop is worth 7 per fathom. The 60, a stop in back of the 50, at Symon's shaft, by five men, at 31. per fathom; the stopes on an average are worth 61. per fathom. A winze to sink below the 44 towards the 70, at Carr's. The bearers, clsters, and standing-lift are completed at the 70 in Good Fortune shaft; this with the two plunger-lifts are answering very satisfactorily. The lift is hardly down to the bottom of the shaft, but we hope to get it there in the course of a few days, and have the 80, or the bottom of the mine, cleared out. The machinery throughout the mine is working well.

NEW WHEAL MARTHA.—G. Rickard, Sept. 3: The lode in the 74 fm. level east is producing 3½ tons of copper ore per fm., and likely to improve. In cross-cutting the lode at the above level we find it fully 24 feet wide, and not yet through it. The lode in the 64 west, in the 100 cross-cut, is composed of capel, spar, and prlan, and is of good saving work for copper ore. The lode in the same level east is composed principally of spar and munde, with spots of copper ore. The lode in the winze, sinking below the 52 fm. level, still retains its value—201. per fm., with every indication of improvement. The lode in the 52, west of engine-shaft, is at present unproductive. The lode in No. 1 stopes is producing 5 tons of copper ore per fm.; No. 2 stopes is producing 7½ tons of copper ore per fm. The winze sinking in the bottom of the 40 is at present yielding small quantity of copper ore. Our tribute pitches are much the same as last reported. Our sampling is computed at 493 tons of copper ore of the usual quality.

NEW WHEAL RISE.—R. Pryor, Sept. 1: The men are making fair progress in cutting the tip-lift in the 45, at Watson's. We have taken down the lode in the 45 west to-day, and find it large, producing some pretty good work for tin; set at 51. 5s. per fm. The 30, west of this shaft, is looking more kindly than for some time; I think we shall have tin in this end shortly; set at 61. per fm. The ground in the 30 cross-cut south is much the same as when I wrote last. The stopes in back of the 20 are worth 41. per fm.; set to four men, at 40s. per fm. The 12 end west, on the north branch, is worth 31. 10s. per fm. The 12 end west, on Watson's lode, is not altogether so well for tin, but looks likely to improve; price for driving 35s. per fm.; we do not expect to sink this lode, but will do in the hills, as we are fast approaching it. In the new shaft I fancy we are very near the lode.

NORTH BULLER.—R. Pryor, H. Harvey, Aug. 29: We have set the following bargains to-day:—The 100 to drive east of engine-shaft, by six men, at 111. per fm. The 100 cross-cut to drive south of this shaft, by six men, at 91. per fm. The 78 to drive east of shaft, by four men, at 81. 10s. per fm. The 60 to drive east of cross-cut, by two men, at 81. per fm. The 84 cross-cut to drive north of King's shaft, by three men and three boys, at 71. 10s. per fathom. The 70 to drive east of said shaft, by two men, at 61. per fm. The 70 cross-cut to drive north of shaft, by two men and two boys, at 81. per fathom. There has been but little change taken place in the bargains since the meeting, except the ground in the 100 cross-cut being a little harder, and also the lode in the 100 looking more promising, but spare for driving, in consequence of it letting out such a quantity of water.

NORTH MINERA.—Jas. Dunkin, Sept. 3: The 25 fm. level, north of engine-shaft, has improved, producing 8 cwt. per fathom. The 25 south is as last reported, producing 5 cwt. per fathom. The stopes in the back of the 15 fm. level is producing 15 cwt. per fathom. The stopes west of same 17 cwt. per fathom. The stopes in the bottom of the 45 yard level 18 cwt. per fathom.

NORTH NANTY-MWYN.—E. Williams, Sept. 1: The men are progressing satisfactorily in sinking the engine-shaft, and there is no alteration in the nature of the ground since last report.

NORTH POOL.—J. S. Phillips, J. Pope, Aug. 29: Roberts's engine-shaft has been sunk 14 fms. 3 ft. from the base, and a large lode has been cut; it is being sunk through, and is very interesting in appearance, containing munde, peach, bent, quartz, prlan, and copper gossan, even at this depth; its underlie is about 3 ft. in a fathom north, and so far as seen it is 4 ft. wide. The adit cross-cut is being continued towards Ballarat shaft, at 71. per fm. The horse-wheel is being daily worked drawing stuff from Ballarat shaft, which has accumulated from the drivings, &c., so as to enable us to drive south to meet the above cross-cut. The masons are engaged building balance pumping beam stand at this shaft, and the tradesmen are busily employed about the necessary appliances for this and the new engine-shaft.

NORTH ROSEWARNE.—J. S. Phillips, J. Tyacke, Aug. 29: Shlmin's engine-shaft has been sunk 18 fms., and is being sunk by nine men as fast as possible. In a beautiful clay-adit, similar to the Duffield Mine, which produced such an abundance of copper ore; spots and stones of copper are of frequent occurrence in the stratum, which we consider indicative of mineral wealth in the lode or vein, when attained in the shaft some 20 fms. deeper. The adit end being driven west on No. 3 lode, continues more interesting than hitherto, and so encouraging that we have taken on two additional men to force it on towards the great cross-course—a good lode for copper ore. The men are raising quarry stone to build the engine-house.

NORTH TREKERRY.—R. Pryor, R. M. Killo, Sept. 3: We have nothing new to report on this week, except that the lode cut in the 47 fm. level cross-cut, 10 months ago, has now formed a junction with the old lode, about 20 fms. west of Tresler's shaft, in the 57; and judging from the appearance of the lode at this point, we are induced to think it is likely to yield large quantities of ore, as it is all in whole ground.

NORTH WHEAL ROBERT.—J. Richards, Sept. 3: Murchison's shaft: In Elliott's cross-cut south, at the 52, the ground is rather hard, and slow for progress. In the 43 west, east of Hear's rise, on No. 1 south, the lode is worth ½ ton of ore per fm. In the 43 west, east of Hear's rise, on No. 1 south, the lode is worth 1 ton of ore per fm. In the 30 west, east of Edward's cross-cut, on No. 1 south, the lode is 18 in. wide, composed of munde, capel, and good stones of ore. In a winze (Scoble's) sinking below the 30, west of Edward's cross-cut, on No. 1 south, the lode is worth 2 tons of ore per fm. The rise in the back of the 30, on No. 3 lode, is communicated with the new or ventilating shaft, which has secured good ventilation for the trial of the whole or part of the south lodes intersected by Edward's cross-cut. In Stancomb's cross-cut north, at the 30 west, the ground continues favourable for progress. In the 30, west of Stancomb's cross-cut, on No. 1 tin lode, the lode is 2 ft. wide, and yielding saving work for tin ore.—Trial Shaft, Tin lode: In the 63 west the lode is 2 ft. wide, from which good stones of tin ore are being obtained. In the 43 east the lode is 2 ft. wide, and consists of capel, munde, peach, and saving work for tin ore. In Wright's winze, sinking below the 43, the lode is 15 in. wide, and worth 101. per fm. The lode in the stopes in the back of the 42 yields good stamps work for tin ore.

OKEL TOR.—W. B. Collum, J. Edwards, Sept. 3: Since the last report the lode in

the end in the 50 has increased in size; it is now 3½ ft. wide, composed of peach and munde, with water coming away from it again. The lode in the winze in bottom of the 80 is looking very well, yielding fully 4 tons of ore per fm. In both the ends, in the 65 and 50, the men are driving by the side of the lode. In the various pitches reported on last week there is an alteration to report, with the exception of the eastern pitch in back of the 65, and the middle pitch in back of the 50, which are both looking better. The western pitch in back of the 50 has been raised, by four men, at 12s. in 11. The ground east on the south side of the lode, in the 65, is hard for driving.

OLD WHEAL NEPTUNE.—E. Harvey, Sept. 2: Trevelyan's engine-shaft is now sunk 46 fms. below the deep adit level, and has communicated with workings made by the former party, but to what extent we cannot yet ascertain, there not being sufficient ground taken away to get below; the lode, so far as we can see it, is producing fine stones of copper ore. We have resumed the driving of the cross-cut north from Polkinghorn's shaft; the ground is highly mineralised, but we have not met with the lode. We are getting on satisfactorily with boundary shaft, the men having got through the run. We have cleared the 34 from Stephen's shaft, which has thoroughly ventilated this part of the mine, and has enabled us to make great progress in driving the cross-cut north at the 24, from Stephen's shaft towards Manley's lode; the men are now working from two o'clock on Monday morning to ten o'clock on Saturday night; every exertion is being made to intersect the lode at the earliest moment. At Giddy's shaft we have fixed 55 fms. of ladder-road, and can now reach the 40, below the deep adit. We have fixed a new collar, and timbered the shaft 6 fms.; the ground below this will stand without timber. At the 20 we have some good ore ground, which will set at a moderate tribute. The prospects at this part of the mine are very encouraging, and as soon as we can get a horse-wheel erected we shall be in a position to set tribute pitches, and see the 50, or bottom level, where there is a good lode of ore now standing for the men to sink. The pitches in the other parts of the mine are just the same as for some time past. Every other operation is going on well.

PANTY-PYDEW.—R. Nankivell, Sept. 3: At Kendrick's engine-shaft, sinking below the 80, the lode is 4 ft. wide, composed of red clay, chert, &c., which is congenial for ore. The sump sinking below the 80, east of Kendrick's shaft, is much the same as when last reported on. In the 80, driving east, the lode is 1½ ft. wide, producing a little ore. We have put four men to clear and timber Roberts's shaft, which is sunk about 15 yards on a flat near the Calib Bell lode. All work is progressing well.

PEDN-AN-DREA UNITED.—W. Tregay, T. Delbridge, Aug. 29: The lode in bottom of the sump-shaft is worth 501. per fm. for the length carried, 15 ft. The cross-cut in the 120 east end has not yet intersected anything of consequence. The 120 west end is worth 51. per fm. The 110 west end is worth 61. per fm. The 100 east end is poor. The 100 west end is looking better, worth 121. per fm. The winze in the bottom of this level is worth 101. per fm. The 90 west, on engine lode, is poor. In the 90 west, on Martin's lode, the lode comes in from the north side is small, containing stones of copper ore.—Cobbler's: The 100 east end is worth 91. per fm. The lode in bottom of Cobbler's shaft is worth 101. per fm. The lode in the 90 east end is worth 81. per fm. The lode in the 65 east end is worth 31. per fm. The lode in the 65 west end is worth 91. per fm. We sold on Thursday last: parcel of copper ore, computed 36 tons, at 41. 6s. per ton, to Mason and Elkington. No other change to report.

PENDREN CONSOLS.—J. Warren, Aug. 29: During the past week the lode in the 130 south is further improved, worth at present 201. per fm. The lode in the rise in back of the 105 south is also improved, and is now worth 121. per fm. In other parts of the mine there is no change calling for remark since last reported.

PENHALLS.—R. Pryor, Aug. 29: The sinking of the engine-shaft and winze below the 40 is progressing satisfactorily, and we hope to take down the lode in the winze by the end of the coming week, when its value I will send to you. There has no change taken place in any other part of the mine during the week.

PRINCE OF WALES.—W. Gifford, Sept. 1: Saturday last being our general setting-day, the following bargains were set:—To sink new shaft on Drake Waila lode by nine men, to pay horse hire and all cost, at 171. per fathom; stent 2 fathoms. Our past month's sinking measured 2 fms. 1 ft. the same men have been engaged in taking out ground for whim, and assisting in erecting the same, &c. The ground in the shaft at present is more favourable for sinking than it has been for the past three weeks. We are constantly meeting with branches of capels and iron coming in from the south side of the shaft, dipping towards the main lode; in my opinion it is an indication of improving the same. The lode has been opened on for full one mile in length, and the backs taken away for tin to a considerable extent, both east and west of our present shaft, in sinking about 9 or 10 fathoms deeper, and then cross-cut south through the lode and branches. I anticipate from the appearance at surface, together with the large amount of work done by the ancients, and its locality, to meet with favourable results. To drive deep adit east, on Good Luck lode, by four men, to tram, fill, and land all their stuff, at 51. 5s. per fathom; stent 2 fathoms; or cut cross-course; the cross-course named is one seen in the 28, carrying its underlie west; according to section, we shall meet with it in the deep adit this month. Our past month's driving measured 3 fms. 4 ft.; lode 2½ to 3 ft. wide, composed of capels, spar, and munde intermixed. I cannot recommend breaking any gossan, with advantage to the adventurers. If we were to go down from the high backs to surface, it would prove the plain ground, but I am doubtful of its being any benefit to the company. I have sent to Mr. Williams; he will take a sample of our parcel of ore to-morrow. I will also have one assayed at Tavistock, and send you the result as early as possible.

PROSEK UNITED.—S. Lean, W. Millett, Sept. 3: The ground in Louisa's diagonal shaft, sinking below the 70, is favourable. The lode in the 70 west, on the north part of the horse, will produce 2 tons of ore per fm. The stopes in the 60, east and west of No. 1 winze, will yield 3 tons of ore per fm. The lode in No. 2 winze, sinking below the 60, is 2 ft. wide, and will produce 1½ ton of ore per fathom. The lode in the 60, west of Hill's shaft, is worth 201. per fm. for tin. The lode in the 60, east of Hosking's engine-shaft, is looking much the same, and will yield 1½ ton of ore per fm. All other places are without change since our last report.

PROVIDENCE.—W. Hollow, F. Rogers, W. Dunstan, Sept. 3: Since the meeting we have discovered in the 75, driving north on the flookan, a bunch of lode, and is producing rich stones of tin, and has every appearance of an important improvement. There is no other change to notice.

REDMOOR.—T. Taylor, Sept. 1: We have not taken down any lode in the 40 east, on Johnson's. In the 60 west we are getting through the small cross-course; lode about 2 ft. wide, worth 61. per fm. In the 60 east the lode or branch on which we were driving is quiet, being eastward, and we are going to the north part. We weighed off at Bissoe Slaters' Works 5 tons 10 cwt. 3 qrs. 3 lbs.

ROARING WATER.—Capt. Thomas, Sept. 1: We are getting down the new shaft satisfactorily; there is a very fine lode of gossan, and stones of rich ore coming in the west of the shaft; I am saving all the gossan in a heap by itself, as I am fully convinced it contains both silver and gold; I will send you a fair sample in the course of a day or two for analysis. There is good ore ground stopping west of the shaft, on Grady's lode, which, from present appearances, promises well; the prospects are good for improvement.

ROSEWARNE CONSOLS.—T. Uren, J. Berryman, W. White, Sept. 1: The lode in the engine-shaft, sinking below the 50, is much the same as last reported, it is 8 in. wide, composed of munde, peach, and a little copper ore. The lode in the 70, both east and west of Ellen's, is 2 ft. wide, of a promising character, producing stones of ore. We have commenced to work on the caunter lode, and shall give a full report on the different operations here as soon as we have opened a little more ground.

ROSEWARNE UNITED.—T. Richards, E. Cartnew, Sept. 3: The ground in Giesler's engine-shaft, sinking below the 20, still continues favourable for progress. The 20 cross-cut is driven 6 fathoms north of the engine-shaft, and the ground still remains good for driving. The lode in the 10, driving west of the engine-shaft, is 2½ ft. wide, containing stones of black and grey ore, and is improving in appearance as we go west. The lode is sunk down to the 10, 2 feet wide, containing stones of yellow copper ore. In the 10, driving east of No. 2 winze, the lode is worth 61. per fathom; ground very good for driving. The lode in No. 2 winze, below the 10, is worth 81. per fathom for copper ore. The lode in the stopes in back of the 10, west of No. 1 winze, is worth 121. per fathom for copper ore. The lode in the stopes, east of No. 2 winze, in back of the 10, is worth 81. per fathom for copper ore. The lode in the adit level, driving west of Harris's shaft, on Duffield lode, is 18 in. wide, composed of gossan and quartz, and containing stones of copper ore.

ROYALTON.—T. Parkyn, Sept. 3: Since my last report we have laid open large quantities of good saving work for tin and copper, and we are now driving the shaft for the 40. In the 40 east north the lode is the same; the 40 south is producing saving work, but not enough to value. The ground both north and south in the 40 is stiff for driving, therefore I have placed full pares of six men in each end, instead of men and boys, which will enable us to open up these levels with more speed. In the 30 north the lode continues to open up profitably, and is about the same value as reported last week. The appearance of the end at present strongly indicates an improvement. The ground by the side of the lode is much easier for progress. In the 20 north the lode is opening up large; it is 2½ ft. wide, composed of quartz and gossan, with spots of munde and schlera, but of no value yet. In the 19, driving east of Yellow's lode, the lode is 10 in. wide, and is small and unproductive. In the 30, east of Yellow's lode, the lode is 10 in. wide, yielding a little tin, but not to value.

SOUTH BULLER.—J. Hosking, Aug. 29: At Hodge's shaft, sinking below the 50, the lode is 9 in. wide, composed of quartz, chlorite, and copper. In the 50 cross-cut, driving north of engine lode, west of Hodge's, the ground continues hard and difficult for driving. In the 50, driving west of Hodge's, the lode is 10 in. wide, composed of quartz, munde, and a little copper. In the 40, driving west of Hodge's, the lode is 8 in. wide, producing stones of copper ore. In the winze sinking in

VALE OF TOWY.—T. Harvey, Sept. 1: The lode in the 124 fathom level, south

WHEAL AGAR.—W. Roberts, Sept. 2. In the 100, west of cross-cut, from Windstow shaft, the lode is 4 ft. wide, producing occasional stones of tin. In the winze sinking under the 80 the lode is 2½ ft. wide, producing good stones of copper ore.—North Lode: In the 70, driving east from the western engine-shaft, the lode is 1½ ft. wide, producing good stones of ore—tributary ground: in the same level, driving west from the footway

quay, Carnarvon, or large house, weighing 10 tons, set into quarry, outside quarry site in the neighbourhood. In two or three more weeks, it is said, the powerful engine erecting there will be completed, when this valuable property (after a lapse of upward of 30 years) will again be in full work, and the shareholders may anticipate large and profitable returns for their outlay.

MINING NOTABILIA.

[EXTRACTS FROM OUR CORRESPONDENCE.]

PONTGIBAUD MINING COMPANY.—I am informed that last year's workings will leave a profit, after paying all expenses, but as they cannot divide more than 5s. per share, the directors here (Paris) will advise to pay no dividend. The liabilities are 132,000 frs., Government loan at 5 per cent., to be paid back in 15 years; and 218,000 frs. obligations, they have to reimburse 26,000 frs. per annum, so that the payments on these loans require about 40,000 frs. The yield is good, and was good all last year, and still continues so from the mines; but they had little water in August, so the returns this month will be small. One of the mines is worked out, and is abandoned. About two months ago a new vein was discovered, which promises to be rich in silver—they hope 2 kilos. to the ton, whilst the present yield is 1100 grammes (1000 grammes = 1 kilo, and 1 kilo = 2 lbs., 10·33 oz.). The depth of the mine is 130 yards. I think the dividend, even of 5s. per share, should be paid, so many years having elapsed since receiving one, and the prospects being good for the future.

NANGILES adjoins the celebrated Clifford Amalgamated Mines, embracing all their rich lodes. The great point of interest at present is the engine-shaft, sinking under the 90, worth 50l. per fathom for copper, and improving as the lode is being taken down. The 86 west is also looking well, worth from 20l. to 30l. per fathom.

NORTH POOL.—In the shaft, 18 fathoms from surface, the lode has been cut 4 ft. wide, composed of gossan, quartz, black oxide of copper ore, with a leader 6 inches wide of yellow copper ore on the hanging wall. This is considered of the greatest importance, from the fact that this point is in close proximity to the cross-course upon which Agar, East Pool, South Crofty, and Carn Brea, have expended a considerable sum of money in erecting machinery to develop parallel lodes.

EAST WHEAL RUSSELL.—The 120 east has further improved, now valued at full 12l. per fm. The main run of ore ground in the levels above is still some fathoms ahead, so that this improvement in the 120 is of considerable importance. The two-monthly sampling of ore is 216 tons, and is more than was expected.

TYWARTHHALE.—This mine is opening well, and in a few months will likely increase its returns considerably. It will, probably, become one of the largest producing copper mines in Cornwall.

SOUTH DABREN.—A valuable discovery has lately been met with in the 30 west at this mine, and which is going into rising ground whole to the surface. The end is worth 2 to 3 tons of rich silver-lead ore per fm., and has been of that value for the last 4 fms. The 20 west, about the same distance, is improving; and the 40 west, about 10 or 12 fms. behind, is yielding ore, and is being pushed on as fast as possible.

CARDIGAN CONSOLS.—In about three weeks about 100 tons of ore will be sampled, which will, probably, realise at least 1500l.

THE DUCHY TAMAR MINE will be shortly before the public. The position is good, being opposite Devon Great Consols, and in the immediate locality of New Wheal Martha, Hingston Down, and other mines. The mine has been inspected by several practical agents, whose reports will shortly appear in the Journal. This piece of mining ground is likely to become a great prize. Capt. J. Richards is understood to be appointed manager, and from his well-known ability, energy, and long experience, the adventurers will be in safe hands.

AT WHEAL CROFTY, only a short time resumed working, a fine course of ore is discovered in driving from Square's shaft; it appears to be a new lode. The fortunate adventurers may congratulate themselves in having a good mine.

EAST RUSSELL is looking much better at several points, more especially at the deeper levels.

ST. IVES WHEAL ALLEN.—This mine is now under the management of Capt. Nancarrow, of the celebrated adjoining mine, St. Ives Consols. Capt. Nancarrow thinks well of the prospects of Wheal Allen, and from his being on the spot, and from his intimate knowledge of the district, together with his judgment, and attention to the mine, it is expected that a favourable change will take place in its state after some time. There are 1024 shares, about 11l. per share paid, and good machinery (including two steam-engines) on the mine.

NEW TREVENEN.—An improvement has recently taken place in the lode in the boundary shaft at this mine, which is now yielding some fine stones of tin, and showing every appearance of improving in depth.

WHEAL CROFTY.—In the 35 the lode is more than 9 ft. wide, 5 ft. of which are good ore ground for copper, turning out at least 4 tons to the fathom. In the 24, west of Square's shaft, the lode is reported as equally good; this lode, which is parallel to the main, or engine lode, the great lode of Old East Wheal Crofty, has never been worked, although it can be reached by cross-cut of from 2 to 6 fathoms at any point down to the 125; this is, therefore, a most important discovery, especially when occurring in the very heart of the richest district in the world for copper.

ROSKEAR.—This mine, immediately adjoining Wheal Crofty, is now about to be worked with vigour, the cost book was formally opened on the 1st inst., and more than 4000 out of the 6000 shares taken. This may be looked upon as a first-class undertaking, since when the mine was stopped it was almost paying costs, although tin was 20l. per ton cheaper than at present, and, independently of tin, the mine returned 250,000l. worth of copper from one lode only in the last working.

CLIJAH AND WENTWORTH.—Capt. F. Pryor and C. Glasson, in their report, say—Since the last meeting we have driven the 80 cross-cut north 13 fms., and are daily expecting to cut the Buckett's and Uny lodes. The 40, east of cross-cut, on Whitford's lode, is opening up tribute ground, and the 30 east is worth 8l. per fm. A winze sunk in the bottom of this level to the 40 has opened up a first-rate piece of tin ground, as the winze for the first 5 fms. sunk was worth 10l. per fm., and the remainder of the distance fine tribute ground. We are pleased to say that the lode in the 20, east of rise, on the same lode, is worth 8l. per fm.; this end is 7 fms. behind the 30, and we look forward to a continuation of this valuable tin ground. We have 37 men on tribute, at 8s. 6d. in 1l., and 26 men on tribute.

WHEAL LOVELL.—I am pleased to hear that a company for the re-working of Wheal Lovell has been formed, and a meeting of the shareholders was recently held, when it was resolved that active operations should be at once commenced. The engine-shaft is being timbered in a very efficient manner to the adit, and the engine will soon be at work. Mr. Carne having expressed a desire to give up the partnership, it was accepted by Mr. T. J. Tyacke, of Helston, who has the confidence of the company in every respect, and is a fit successor to Mr. Carne. There can be little reasonable doubt of the success of the speculation, and the names of the shareholders give a guarantee that the objects named in the prospectus will be fairly and spiritedly followed out, to do which there is ample machinery, all fixed in the best possible position for its intended work. A more legitimate speculation has not been brought before the public since that of Wheal Basset and Glyn—the prospects are equally good, and the prospective outlay about the same amount. —STANNUM.

CROWAN CONSOLS.—The operations now in progress at this mine prove that the high opinion which has always been entertained of it will soon be realised. The lode now out is improving in value; pitches are set at a low tribute, and more tribute ground opening up, and before long very profitable returns will be made. Looking at the locality, the numerous valuable lodes in the set, the abundance and richness of the ore, and the discoveries just made, shareholders may look forward with confidence to an increasingly valuable mine being opened up; indeed, by those who know the property, there cannot be two opinions as to the results which will follow its judicious development.

WHEAL CURTIS (CROWAN).—The lode in the 10 fm. level west, on the Dumping lode, has greatly improved during the last few days, and is worth about 2 tons per fm. for copper. Two or three pitches are already set at a low rate of tribute, and this mine bids fair to equal the richest mines of the district, which in former years held a position similar to that now held by the Camborne, Gwennap, and Illogan districts.

NANGILES AND CLIFFORD AMALGAMATED.—Both these mines have greatly improved. Shares in the former have advanced from 6l. to 28l.; and in the latter from 20l. to 36l., within the last three months. Nangiles adjoins Clifford, therefore embraces the same lodes; there is every prospect of these shares going to 100l. each, and the mine turning out a lasting dividend-paying property. All the required machinery is upon the mine, and in good working order. The lode in the shaft is worth 60l. per fathom; and in the 86 and (Bread and Cheese shaft), 20l. per fm. There are only 1024 shares, with 14l. paid. Shareholders in Clifford Amalgamated would do well to buy into Nangiles, at 28l. per share, while they can be had.

NEWTON LEAD MINE (Breconshire).—Great activity is being manifested in bringing this mine (formerly called Abergeesian) into a working state. It is not six months ago that this valuable property was obtained by a gentleman well known in mining circles (Mr. Josiah Harris). Since then numerous levels have been cleared, the water-wheel repaired, extensive reservoirs made, and some splendid courses of ore laid open upon the celebrated Red lode, now producing at Nanty Mwyn 100 tons of lead ore per month. The property is very extensive, being three miles on the course of the lode. Mr. Harris is confining his operations at present to the Red lode. There are eight other lodes well known to be in the property.

TYWARTHHALE MINE is gradually improving both in quality and quantity; the last yield, with carriage, realised nearly 1500l.; the next is expected to be 1700l. No doubt shortly this mine will pay expenses, and may be expected to be in the Dividend List, as returns will be greater and expenses much less. All the required machinery is being erected. Great credit is due to the agents for the energy shown in bringing the mine to its present good position.

NEW PATENTS.

PROVISIONAL PROTECTION for six months has been granted for the following during the past week:—

E. B. WILSON, Parliament-street, Westminster.—Improvements in blast-furnaces. Dated August 14.
G. DAVIES, Lincoln's Inn, Middlesex.—Improvements in furnaces for heating, flattening, &c. Dated August 15.
G. T. BOWFIELD, Brixton, Surrey.—Improvements in the manufacture of cement. Dated August 15.
H. ROBINSON, Skipton, York.—Improvements in lime-kilns. Dated August 15.
LIST OF SPECIFICATIONS published during the week ending August 22:—
Preventing over-winding at collieries, &c. 8d.; furnaces, 6d.; caustic soda, &c., 4d.; application of power to stationary and traction engines, &c., 6d.
Furnished by L. DE FONTAINEMOREAU, Patent Agent.

WEATHER PREDICTIONS.

SUN.—Since my last the weather has been somewhat showery, but nothing to hurt the grain, or alarm our farmers. With reference to the future, after the 6th the weather will be generally fine. The late thunderstorms have considerably shaken the atmosphere, and given us rather more rain than I expected. For the sake of the pastures, I am glad it has been so.
26, Throgmorton-street, Sept. 3. GEORGE SHEPHERD, C.E.,
Author of the "Climate of England."

BIRD.—On August 25, at Mona Lodge, Amlwch, Anglesey, North Wales, aged 64, Mr. EVANS, who for the last 50 years was in the employ of the Mona Mining Company—much respected as a public man, and regretted by all who knew him.

With this week's Journal we publish a SUPPLEMENTAL SHEET, which contains an epitome of the contents of many of the more interesting papers read before the British Association for the Advancement of Science, at the meeting at Newcastle-on-Tyne, just concluded; upon a future opportunity we shall allude to other of the papers. An interesting paper on Aluminium will also be found, and various other useful information.

The Mining Market; Prices of Metals, Ores, &c.

METAL MARKET—LONDON, Sept. 4, 1863.

COPPER.			BRASS.		
Best selected.	£ s. d.		Sheets.	Per lb.	
Tough cake.	95 0 0	—	Wire.	8½d.-10½d.	
Tin.	95 0 0	—	Tubes.	11d.-12½d.	
Burna Burna.	95 0 0	—			
Copper wire.	0 1 0-1 10	—			
ditto ditto.	0 1 0½-1 3	—			
Sheeting & bolts.	102 0 0	—			
Bottoms.	104 0 0	—			
Old (Exchange).	85 0 0	—			
IRON.			STEEL.		
Bars, Welsh, in London.	£ s. d.		Swedish, in keps (rolled).	Per Ton.	
ditto, to arrive.	7 0 0	—	(hammered).	15 10 0-18 0 0	
Nail rods.	7 10 0-7 15 0	—	ditto, in faggots.	17 0 0-18 0 0	
Stafford, in London.	8 5 0	—	English, Spring.	18 0 0-23 0 0	
Bars.	8 0 0-8 10 0	—	Beesmer's, Engineers Tool.	4 0 0	
Hoops.	8 17 0-9 2 6	—	" Spindle.	30 0 0	
Sheet, single.	9 17 0-10 10 0	—	QUICKSILVER.	7 0 0	per bottle
Fig. No. 1, in Wales.	3 10 0-4 0 0	—			
Refined metal, ditto.	4 0 0-5 0 0	—			
Bars, common, ditto.	6 5 0-6 12 6	—			
ditto, merchant, in Tees.	6 12 6	—			
ditto, railway, in Wales.	7 2 6-6 5 0	—			
ditto, Swed., in London.	11 0 0-12 10 0	—			
To arrive.	11 10 0-12 10 0	—			
Fig. No. 1, in Clyde.	3 10 0-3 0 0	—			
ditto, f.o.b. in Tees.	3 10 0-2 12 6	—			
ditto, f.o.b. in Tees.	2 5 0-2 7 6	—			
Railway chairs.	5 10 0-5 15 0	—			
" spikes.	11 0 0-12 0 0	—			
LEAD.			ZINC.		
English Pig, ordy.	20 0 0-20 10 0	—			
ditto (WB).	21 7 6-21 10 0	—			
ditto sheet.	20 10 0	—			
ditto rod.	21 0 0-21 15 0	—			
ditto white.	22 0 0-22 7 6	—			
ditto patent shot.	26 10 0-27 0 0	—			
Spanish.	19 5 0	—			
	At the works, 1s. to 1s. 6d. per box less.				

REMARKS.—Our market has manifested during the past week symptoms of returning vitality, and although it has not resumed its wonted tone, yet considerable activity has been evinced in some kinds of metals, and as at this time of the year business is generally brisk, it is hoped the present will be no exception to the rule, especially as there are some slight appearances of a pacific solution to continental difficulties.

COPPER continues nearly in the same position as last week, prices remain somewhat firmer, though little business is doing, and not much is offering under fixed rates.

IRON.—In Welsh and Staffordshire the prices are well maintained, and there is every probability of a further advance taking place at the next quarterly meeting. Ironmasters are well supplied with orders, and some of them are not disposed to book fresh ones except at higher prices. Large orders for rails have been given out at increased rates. A very considerable business has been done in Swedish, which has caused the price to become very firm, with an upward tendency. In the Scotch pig trade a strike among some of the ironstone miners has taken place, but the extent is not yet fully known, nor can it be said with any certainty what effect it may have upon the make. The last transaction reported in the market is 1000 tons, at 55s. 7½d., three months, and it closed, sellers, at 55s. 9d. three months, and 55s. 3d. cash; buyers at 55s. 7½d. three months, and 55s. cash.

LEAD.—Not much doing, market quiet, but firm.

TIN.—No improvement has taken place in this metal, the market still languishing. Transactions in Straits have occurred at 115l. 10s. In Banca, advices from Amsterdam state the stock on Aug. 31 to be 100,089 slabs, against 105,406 slabs, the same date last year. The arrivals for the Society of Commerce for the next sale are 21,997 slabs, against 27,632 slabs the same date last year. The market there continues generally dull, 74 fls. being the present quotation.

SPELTER is gradually advancing in price, 18l. 12s. 6d. being paid at the commencement of the week, and latterly 18l. 15s. being asked and obtained. The market is remarkably healthy, and prices may be expected still to advance. The stock in London on Aug. 31 was 5384 tons, being an increase of 343 tons during the month.

STEEL.—Prices well maintained, although transactions are limited. **TIN-PLATES** remain steady, makers being well supplied with orders. **QUICKSILVER** is now quiet, and the available stock here is again exhausted.

MIDDLEBRO'-ON-TEES, AUG. 31.—The healthy tone which characterised the Cleveland Iron Trade a month ago is still in full force, and a further rise in the price of No. 3 pigs has taken place. A few years ago Cleveland pig-iron was almost unsaleable, especially amongst founders, the prevailing notion then being that it was unfit alike for melting and manufacturing purposes; this idea, however, has been fully exploded, and during the last three years the sale for all purposes has been immense. Our present production, inclusive of the Tyne and Wear, may be estimated at 17,000 tons per week, and before another summer that quantity will have been increased to 20,000 tons. Our stocks are equivalent to 10 days' make; the demand is, therefore, equal to the production, as less stock than 25,000 tons would interfere with the prompt execution of orders. The above figures fully bear out the fact that the value of the Cleveland pig, either alone or as a mixture, particularly the latter, is being more justly estimated by the consumers generally. The favour shown to our pig-iron has been extended to the manufactured article, the demand for the latter being beyond the powers of production. For many purposes our iron is especially adapted, and preference obtained where great strength is required. The site for Messrs. Fox, Head, and Co.'s plate mills has been definitely fixed, and an early commencement is contemplated. Our iron shipbuilders are in full work, and a better price is being obtained. About 60 iron vessels are being constructed on our three rivers—Tees, Tyne, and Wear. The Cleveland Bolt and Nut Company are steadily increasing their works to meet the ever-growing demand for their manufactures. The Rosedale Iron Mining Company have purchased many hundred acres of land in Rosedale, with a view to working other parts of the Dale, their present mines being unequal to the demands of the ironmasters. This stone is very valuable as a mixture with the Cleveland, the two, in certain proportions, producing an excellent pig; alone it is soft, but weak. The visit of a section of the British Association to our iron mines and works, on Sept. 3, will benefit the district, and afford pleasure and information to the visitors. —ROBERT BIRNIE AND CO.

THE TIN TRADE.—Mr. N. Breebaart (Goll and Co., Amsterdam), under date Aug. 31, writes:—Our market continues to share in the general depression of business. At the beginning of the month 74 fl. was paid, and holders were not without a certain appearance of firmness. This price did not, however, tempt speculators, and, in the absence of real demand, dullness soon gained the upperhand, so that, after a short interval, it was not difficult to find sellers at 74 fl. and 75 fl.

	1863.	1862.	1861.
Stock of Banca tin on warrants on July 31	Slabs 129,853	136,048	140,739
Deliveries in August	29,764	30,637	46,738
Stock on warrants August 31	100,089	105,406	94,011
Stock in hands of Trading Society for annual sale	21,997	27,632	21,369

Purchases effected on commission, added to some on speculation, restored for a little while some activity to the market; but it did not produce any permanent improvement, and for the remainder of the month the price has not been able to recover itself. We should think, however, that the aspect of the market is a little less depressed than it was some days ago. There appears less disposition to realise, and it seems that 74 fl. is the lowest price at which sellers could be found to-day.

THE MINING SHARE MARKET has been only moderately active this week, and presents no new or particular feature. The chief business has been in East Caradon, East Grenville, Clifford Amalgamated, Wheal Agar, East Basset, Nangiles, Wheal Basset, North Roskear, South Grenville, Gona-mena, Great Retallack, Unity, Stray Park, Kitty (St. Agnes), Wheal Seton, and a few other mines. Clifford Amalgamated shares have been as low as 32, then rose to 36, buyers, and leave off 34½ to 35½. The fall was owing to a run having taken place in the mine between the 208 and 220 fm. levels, which caused a slight delay in the works, and will lessen the next sampling about 150 tons. The agents, however, hope to recover the sampling in the following month, and the accident is not considered of any great importance, though it was doubtless known to some parties in town last week, and made use of for market purposes, and on this account it is to be regretted that official intelligence was not at once forwarded to the Mining Exchange, where shares were so largely dealt in. Wheal Basset shares have been in request, and advanced to 75, 80. Wheal Kitty (St. Agnes), 8½ to 8½; the lode in the 100 east is worth 15l. per fm.; 50 east, 13l. per fm.; rise, 25l. per fm.; new shaft, 17l. per fm.; 64 west,

10l. per fm.; 44 east, 10l.; west, 13l.; 34 east, 8l.; rise, 15l.; new shaft, 20l. per fathom.

East Caradon, after fluctuating up and down, leave off 28½ to 29; the official report values the 70 east at 20l. per fm.; the 70 west, 10l. to 12l.; the 50 east, 12l.; in the 60 south, ground very favourable.—New Lode: The 70 east, 5l. per fm.; the 70 west, 10l. to 12l.—South Lode: The 60 east, 15l.; the 60 west, 10l. Bryn Gwlog, 32½ to 33½; Carn Brea, 65 to 70; Devon Great Consols, 565 to 575; East Basset, 78 to 80; East Carn Brea, 7½ to 8½. Wheal Grenville shares have been flatter, and leave off 5½ to 6½. East Grenville shares declined to 3½, but quickly rallied, and leave off 3½ to 3½. The lode in the 65 east is worth 3 tons per fm.; the 65 west, 1 to 1½ ton. South Grenville shares have been very largely dealt in, and leave off 5s. to 6s.; a good looking lode, 20 in. wide, has been cut, composed of quartz, pryan, and gossan; and it is said by the agents it is a prettier looking lode than those at Grenville and East Grenville, when they were first discovered. Drake Walls have been more active, and leave off 34s. to 36s.; at the meeting the accounts showed a balance in favour of the company of 753l. 9s. 1d. The sales of tin were small, owing to the want of surface water for the stamps and for dressing; but the general prospects of the mine are improving, particularly going west. East Rosewarne, 2½ to 2½; the lode in Hallett's shaft is worth 14l. per fm.; the sump-winze, 20l. per fm.; the 55 west, 14l. per fm. The mine has sampled 138 tons of good ore for the two months' working. Wheal Edward, 2½ to 3; the new south lode has improved; the 50 east is worth 10l. per fm.; the rise, 15l. to 20l. per fm.; and the stopes, 25l. per fm. At Great Wheal Busy, the profit on the last three months' working amounted to 300l., and a debit balance of 181l. was carried over. The report was favourable. East Russell, 3½ to 4. Gona-mena shares have been in good request, and advanced to 3½, 4; the cross-cut must be near the lode, but not yet intersected, that we hear of.

Wheal Unity shares more in request, at 14s. to 16s. The lode is improving as it goes down below the 40. In the back of the 40 a pitch has been set at 2s. 6d. in 1l., and in about three weeks 10 to 15 tons of rich ore will be sold to test its quality. Great Retallack shares have been in request, and advanced to 6s., 8s. Great South Tolgus, 3½ to 3½; Great Wheal Fortune, 29 to 30; Hingston Down, 2½ to 2½; Kelly Bray, 15s. to 17s. 6d. At East Pool meeting the accounts showed a profit of 551l. The agent's report values the 150, east of engine-shaft, at 40l. per fm. for tin and copper; 150 west, 30l. per fm.; a winze below the 150, 40l. per fathom. The engine-shaft is down 9 fms. below the 140. Marke Valley, 6½ to 6½; North Basset, 3 to 3½; North Buller, 4 to 5; North Crofty, 3½ to 3½; North Downs, 1½ to 2½; North Roskear shares have advanced to 25, 26; Chiverton, 7 to 7½; West Chiverton shares have advanced to 31, 32; Pendean, 6½ to 7; Providence Mines, 41 to 43; South Caradon Wheal Hooper, 14s. to 16s.; South Crofty, 24 to 26; South Tolgus, 41 to 43; Stray Park, 37 to 39; Tolvadden, ½ to ½; West Seton, 225 to 235; Wheal Agar shares in demand, and advanced to 3½, to 3½; Wheal Glyn, 23 to 30; Wheal Kitty (Lelant), 10½ to 11½; Wheal Ludcott, 3½ to 3½; Wheal Mary Ann, 11½ to 12½. Wheal Seton, 215 to 220; mine looking well. Wheal Trelawny, 16 to 17; Wheal Tremayne, 10 to 11 per 2044th; Wheal Uny, 5½ to 5½; Glasgow Consols, 4 to 4½, and in demand; South Caradon, 415 to 420.

Tincroft, 19½ to 20½, ex dividend, and bonus of 20s. per share; the accounts at the meeting showed a profit of 6427l. 12s. 9d. in the six months (out of which a dividend of 1500l. had been declared in April). The money received from Cook's Kitchen, for the disputed boundary question, was 1800l., and out of this sum the bonus of 5s. per share was declared. The ends in the Highburrow lode are worth 55l. per fm., and the mine generally reported as looking well. Wheal Crebor shares are flat at 31s. to 33s.; they are through the cross-course, but not yet got the lode. Nangiles, 26½ to 27½; the lode in the shaft, we understand, is worth 60l. per fm.; in the 86 (Bread and Cheese shaft), 20l. per fm. The mine is in the same run of lodes as Clifford Amalgamated. Wheal Buller, 39 to 41; at Kistie's shaft, sinking under the 100, the lode is 3 feet wide, but poor. Copper Hill, 20 to 21; the 70, east of cross winze, is worth 6 tons of ore per fathom.

On the Stock Exchange, a rather active demand has prevailed for Mining Shares during the week. The following prices were officially recorded in British Mining Shares:—Clifford, 33½, 32, 35½; East Caradon, 28½, 28½, 28½; Wheal Ludcott, 3½; Drake Walls, 1½, 1½, 1½; Devon Great Consols, 566½, 570; Wheal Buller, 40; East Carn Brea, 7½; East Wheal Russell, 4; Margaret, 30. In Colonial Mining Shares the prices were:—General, 20½, 20½, 21½, 21½, 21½; Port Phillip, 1½; Ydanna-mutana, 2½, 3, 3½, 3½, 3½, 3½; Scottish Australian, 4, 4, 4. In Foreign Mining Shares the prices were:—Cobre, 32, 31½, 32½, 31½, 31, 31½, 30½, 31; Montes Aures, 2½, 2½, 2½; St. John del Rey, 56; Val-lanzasca, 1½, 1; Don Pedro, ½, 1; Fortuna, 4½; Mariquita, ½.

THE IRISH MINE SHARE MARKET.—We have recovered from the stagnation in all our speculations, but only in consequence of the interesting meetings held this week of three of the principal mining companies in the county of Wicklow—the Wicklow Copper Mining Company; and the Hibernian Mining Company, the amalgamation of which is now accomplished, to the satisfaction of all concerned; and of the Connoree Mining Company. The proceedings of the Connoree Mining Company are interesting, so far as they illustrate the wisdom of shareholders looking after their own interests, and speaking out unflinchingly whenever they see that the directors fall short of the performance of the duty they have undertaken. We have, on previous occasions, alluded to the absence of sufficiently explicit details in the accounts furnished to the shareholders and the public; and we hail it as a move in the right direction that the shareholders at their last meeting, on the motion of Mr. Boswell, almost unanimously resolved on sending back the accounts furnished by the board of directors, to be made more clear, if not more correct, and have for that purpose adjourned the meeting to the 30th inst. The Wicklow Copper and Hibernian Mining Companies' meetings passed off most satisfactorily, and creditably to the directors of both these companies. Space will not allow us to publish the full reports of either of those meetings, but in next week's Journal we hope to furnish our readers with them at considerable length. In the meantime we may observe that, if anything were wanting to prove the chances of great success of mining in Ireland, especially in the county Wicklow, the retrospective report on the steady and speedy development of the Wicklow Copper Mines, proves that there are elements in our country which only require a prudent and honest pursuit of them to be made rich resources for investors and employed. This company, which commenced, so to speak, years ago with a loan of 1000l. from the Board of Works, has, up to the present day, divided no less an amount than 135,750l., and has further declared a dividend of 26s. per share, payable on Dec. 31 next. The success of this company has, of course, been a source of great profit to their landlords—the Hibernian Mining Company; and these, also, are the occasion of amalgamation with the former; and, after a very long and most successful career, have declared a dividend of 2l. per share, payable after the 1st inst.

As might be expected, the dealings in mining shares were most lively in the old and new shares of the Amalgamated Mines and the Connoree. The Wicklow Copper old shares were in great request, at 38l. 10s., and the new shares at 12l. 10s. Connoree shares fell from 16s. 9d. to 16s. In Carysfort shares there was but one transaction, at 19s. The reports from this company's Ballintemple Lead Mines show nothing of a falling off of its productiveness or intrinsic value of this mine; but it appears, from some inexplicable motive, more attention is just now paid to the drivings north in the deep level, where the mine at shallow depths was always poorer than to the southern ends, where better success might speedily be expected. This company has spent so large an amount of capital and time, and yet been so slow in the development of their undoubtedly valuable property, that it would be well if the shareholders followed the precedent set to them by those of the Connoree Company, and insisted on taking a little more of the management into their own hands, and, among other useful things, insisted on a complete and practical survey of their mines by men whose experience and sound judgment have been proved in equally old mining districts.

The Tredinney Mining Company, with a capital of 20,000l., in shares of 5l. each, has issued its prospectus, the object of the undertaking being to further develop the tin mine of the same name, in the parish of St. Just. It is stated to contain several well-defined lodes, some of which have already been partially worked with considerable success. The sett is held for 21 years, at a nominal rent of 5l. per annum, merging into dues at 1-24th. The purchase-money has been fixed at 4000l., ha. in cash, by instalments, and half in shares; and the preliminary expenses to the date of allotment have been undertaken by the vendor, in consideration of a fixed

Capt. Charles Thomas, of Dolcoath; Francis Oates, of St. Just; B. Berryman, of Boscan; James Thomas, of North Levant; James Bennett, of Spearhead; John Cartwright, of St. Just United and other mines, and by several other well-known and practical miners.

The West Wheel Friendship Copper Mining Company has been constituted on the limited liability principle, with a capital of 30,000*l.*, in shares of 1*l.* each, the whole of which is to be paid up upon allotment: the prospectus will be found in another column. Capt. Josiah Hitchens and James Richards have reported favourably upon the prospects of the undertaking. The Old Wheel Friendship, an adjoining mine, has been worked some sixty years, and during that period each share has returned to its fortunate owner the sum of 2400*l.*, yielding over 35,000*l.* clear profits to its proprietors. The lodes that have been worked with such glorious results in this mine run, it is stated, through the West Wheel Friendship sett. On this point those who know the district have no doubt at all. Capt. Hitchens says the lode is 12 feet wide, capel included, and in the adit level its lineal course is about 15° north of west, and its declination 27° to the north, corresponding precisely in such particular characteristic with the main lode in Wheel Friendship. On the erection of a powerful engine, and the mine being cleared of the water and accumulated rubbish, it is confidently expected that ore will be at once obtained, as it is the opinion of those well acquainted with the workings by the former proprietors, that at the time the operations were suspended the main lode had actually been cut in the adit. It is believed that West Wheel Friendship will very speedily take its position among the dividend-paying mines of the neighbourhood.

A Steam-Boring Company, to contract for boring for minerals, boring Artesian wells, and proving foundations for buildings, &c., is now being formed. The head quarters are to be in London, but directors, referees, brokers, &c., will be in various parts of the country. The London and Glasgow officials, we understand, are already fixed, and orders for several boring engines for the Continent have already been obtained.

The following are the Government Returns of the exports of article identified with mining, the produce and manufacture of Great Britain, for the seven months ending July 31, 1863; and also as compared with the month ending July 31, 1862; extracted from the "Accounts relating to Trade and Navigation," published by the Board of Trade:—

DECLARED VALUE FOR THE SEVEN MONTHS ENDING JULY 31.			
	1862.	1863.	Increase.
Coal and culm	£2,103,680	£2,073,356	—
Hardwares and cutlery	£1,793,812	1,966,691	172,879
Do. surgical instruments	165,277	162,751	2,526
Do. agricultural implement	254,218	251,422	2,796
Do. other sorts	1,372,317	1,542,518	170,201
Machinery:—			
Steam-engines	£ 888,732	920,776	32,044
Others	1,306,716	1,326,601	19,885
Total	£7,886,752	£8,234,305	347,553
Metals:—Iron—Pig	£ 715,138	£ 744,349	29,211
Bar, bolt	1,245,794	1,378,850	133,056
Railway	1,600,583	1,851,150	250,567
Wire	150,925	237,061	86,136
Castings	194,953	59,554	135,399
Hoops	224,674	427,288	202,614
Wrought	561,311	863,775	302,464
Old	1,085,397	1,151,052	65,655
Steel	53,591	40,899	12,692
Copper—Unwrought	277,565	307,374	29,809
Wrought	1,091,276	1,457,211	365,935
Other sorts	87,669	1,456,510	1,368,841
Brass	114,063	124,109	10,046
Lead—Pig	414,112	488,189	74,077
One	117,666	531,778	414,112
Tin—Unwrought	287,162	274,842	12,320
Tin-Plates	766,583	780,600	14,017
Zinc	55,064	60,747	5,683
Grand total	£17,537,721	£19,538,460	£2,000,739
Less decrease—Coal and culm, 30,324 <i>l.</i> ; tin unwrought, 13,320 <i>l.</i> ; zinc, 4317 <i>l.</i>			46,961
Total			£19,491,499

At Camborne Ticketing, on Thursday, 3260 tons of ore were sold, realising 16,905*l.* 19*s.* 6*d.* The particulars of the sale were:—Average standard, 115*l.* 4*s.*; average produce, 6*s.*; average price per ton, 5*s.* 4*s.*; quantity of fine copper, 223 tons 12 cwt. The following are the particulars:—

Date.	Tons.	Standard.	Produce.	Price per ton.	Ore copper.
Aug. 6	3633	119 4 0	6 5	5 4 0	78 9 0
" 13	2885	118 11 0	6 5	5 4 0	78 9 0
" 20	5173	124 8 0	6 5	5 4 0	76 14 0
" 27	2872	118 7 0	6 5	5 4 0	78 11 0
Sept. 3	3260	115 14 0	7 5	5 4 0	75 12 0

Compared with last week's sale, the decline has been in the standard 1*l.*, and in the price per ton of ore about 1*s.* 6*d.* Compared with the corresponding sale of last month, the decline has been in the standard 2*l.* 10*s.*, and in the price per ton of ore about 4*s.*

The following dividends have been declared during August:—

Mines.	Per share.	Amount.
Miners	£7 15 0	£13,950 0 0
Wicklow	1 0 0	6,500 0 0
Tincroft	1 0 0	6,500 0 0
Dolcoath	8 0 0	2,564 0 0
West Wheel Seta	5 0 0	2,000 0 0
Hibernian	2 0 0	2,000 0 0
Clifford Amalgamated	0 12 6	1,812 10 0
Providence	1 0 0	1,400 0 0
Botallack	7 0 0	1,400 0 0
Great Wheel Fortune	0 15 0	1,348 10 0
Lisburne	3 0 0	1,200 0 0
Cargill	1 0 0	1,145 0 0
Wheel Seta	3 0 0	1,188 0 0
Wheel Tremayne	0 10 0	1,022 0 0
St. Ives Consols	1 0 0	940 0 0
East Pool	5 0 0	610 0 0
Bronfloyd	0 2 6	625 0 0
East Darren	2 0 0	600 0 0
Wheel Trevelyan	0 10 0	520 0 0
Cwmystwlth	4 0 0	512 0 0
Wheel Basset	1 0 0	512 0 0
Wheel Owles	5 0 0	400 0 0
Yudnamutana	0 5 0	11,250 0 0
Total		£59,920 0 0

At the Miners Mining Company meeting, on August 7, a dividend of 7*s.* 15*s.* per share, of income tax, was declared, thus making for the year, to June 30 last, 29*s.* 15*s.* per share, equal to 119 per cent. on the share capital for twelve months.

At East Pool Mine meeting, on Monday, the accounts for June and July showed a credit balance of 74*s.* 9*d.* The profit on the two months' working was 551*s.* 3*d.* A dividend of 640*s.* (5*s.* per share) was declared. Capt. W. S. Garby, N. Tamlyn, and J. Maynard, reported upon the mine.

At the Wicklow Copper Mine Company meeting, on Monday, a final dividend of 2*s.* per share was declared. A special vote of thanks was accorded to the directors, for their attention to, and successful management of, the affairs of the company.

At Boscawen Mines meeting, on Aug. 28, the accounts for the quarter ending June showed a credit balance of 72*s.* 10*s.* 7*d.* The tin sales for three months were 2488*l.* 4*s.* 9*d.* A dividend of 512*s.* (5*s.* per share) was declared, and 416*l.* 10*s.* 7*d.* carried on. The tributors throughout the mines are raising good quantities of tinstuff. They have 38 bargains: 13 levels and 2 winzes on tutwork, and 23 pitches on tribute. Capt. W. Noy and J. Guy reported on the mine.

At the Wheel Jane (Ken) meeting, on Monday, the accounts showed a credit balance of 298*l.* 7*s.* 7*d.* Capt. T. Bray and W. Gilles reported that—"We have 11 tutwork bargains, employing 42 men and 29 boys. The tribute department is looking well; we have 23 pitches, employing 53 men and 5 boys, at a tribute varying from 3*s.* 6*d.* to 12*s.* 1*d.* The amount realised at our last two sales of tin ore, for which credit is not given to-day, is 1750*l.* 6*s.* 4*d.*, also 300 tons of muddle, 172*l.* 10*s.*, which augurs well for the next account."

At the Garden Mine meeting, on August 28, the accounts for the three months ending June showed—Labour cost, merchants' bills, &c., 371*l.* 0*s.* 9*d.*; balance against the adventurers, from last meeting, 160*l.* 8*s.* 3*d.*, making the total debit 531*l.* 9*s.* 2*d.* The credits were—Cash made, May 29, 456*l.*; tin sold (less lord's dues), 200*l.* 2*s.* 5*d.*; total, 656*l.* 2*s.* 5*d.*, leaving a balance of 124*l.* 13*s.* 5*d.* in favour of the adventurers. The agent's report stated the adit and the 12 fathom level to be still opening good payable ground, the opening of which will enable them to meet cost for some time. The 24 fathom level will shortly be under the same run of tin ground; should this prove equally good, the prospects of the mine will be more encouraging: 30 persons are employed.

At Trevelyan Mine meeting, yesterday, the accounts showed a debit balance of 717*l.* 1*s.* A call of 6*s.* per share was made. The report in another column.

At the Erffwelan Lead Mining Company meeting, on Aug. 26, the accounts showed a balance in favour of the mine of 1*l.* 5*s.* 4*d.* Details will be found in another column.

At East Basset and Grylls Mine meeting, on Aug. 27, it was reported that since the preliminary meeting, about two months since, much progress had been made in the works at surface and underground. The engine-shaft is completed to adit, in the kind of granite that never fails in producing tin in this district. The engine (a very good one) has been purchased and paid for, and will be at work in about ten weeks. A good bunch of tin, that can be worked at 10*s.* in 1*l.* tribute, has been discovered, and altogether there is not a rising mine in the locality with more cheering prospects than East Basset and Grylls. A call of 10*s.* per share was readily voted for carrying on the

works for the ensuing quarter, at the end of which there is little doubt about the agent being able to report good progress, and, perhaps, something better.

At New Hendra Mine meeting, on August 20, the accounts showed a credit balance of 271*l.* 15*s.* 4*d.* A call of 6*s.* per share was made. The salaries of the agent and agent for the future to be 3*s.* 6*d.* each per month. Captains R. King and S. Harris reported on the mine. They sold, on July 18, 20*l.* 20*s.* 20*d.* of tin ore, realising 8*s.* 6*d.*, and have some tinstuff, and a small pile of copper ore, now on the floor.

At West Sharp Tor Mine meeting, on Thursday, the accounts for May, June, and July showed a cash balance of 255*l.* 7*s.* 11*d.* in favour of adventurers; and there are arrears of calls amounting to 138*l.*; but the merchants' bills for May, June, and July, amounting to 209*l.* 7*s.* 11*d.*, remain unpaid. A call of 3*s.* per share was made. The report appears in another column.

At the Great Wheel Busy meeting, on Thursday (Mr. J. Fielding in the chair), the accounts showed a debit balance of 181*l.* 11*s.* 3*d.* Details in another column.

At the Boscawen Mine meeting, on Tuesday (Mr. J. Fielding in the chair), the accounts showed a debit balance of 1677*l.* 19*s.* 3*d.* A call of 6*s.* per share was made. Details in another column.

At the St. David's Gold Mine (first annual) meeting, on Monday, (Capt. Maude in the chair), the accounts showed an available balance of 2295*l.* 0*s.* 8*d.* The directors' report and balance-sheet were received and adopted. Details in another column.

At the Bantry Bay Slate and Slab Company (special) meeting, on Thursday (Major-General Mason in the chair), the special resolutions passed at the last meeting (which appeared in the Journal of Aug. 15) were unanimously confirmed.

At the Llantwit Vardre Colliery Company (first annual) meeting, on Wednesday (Lord Henry Gordon in the chair), the accounts showed a balance at the bankers of 993*l.* 18*s.* There are 1235 shares not yet subscribed for. The report and accounts were received and adopted, and the retiring directors were re-elected, and Mr. Miles Seton was voted to a seat at the board. Details in another column.

At the Santa Barbara Gold Mine meeting, on Monday (Mr. Carne in the chair), the report of the directors and accounts (which appeared in last week's Journal) were received and adopted. Details in another column.

At the Fortune Copper Mining Company of Western Australia meeting, to be held on September 16, the accounts for the twelve months ending July 8, will show—capital received, 49,070*l.*; interest and transfer fees, 223*l.* 3*s.* 7*d.*; accounts charged contra but not paid, 473*l.* 9*s.* 9*d.* = 49,766*l.* 13*s.* 4*d.*—On account of purchase of mines, 30,500*l.*; mine cost, machinery, sending captain and miners to colony, preliminary expenses, &c., 11,869*l.* 2*s.* 6*d.*; leaving credit balance, 7397*l.* 10*s.* 10*d.* The directors report that on taking the property, 235 tons were handed over to the company, the company to pay cost (1906*l.* 10*s.*) after realisation; of this, 194 tons have been sold for 2462*l.* 5*s.* 6*d.* In addition to this, 150 tons have arrived per *Palatine*, and 130 tons by *Imper* is advised. There was also at Champion Bay a small quantity of copper ore on March 31, and about 200 tons of lead ore. The captain, sixteen miners, and the necessary machinery, left England in April last.

SOUTH TAMAR CONSOLS MINES.—A final distribution of 4*s.* 8*d.* per share is announced as now payable to the shareholders.

ADELAIDE LAND AND GOLD COMPANY.—Messrs. Hancock, Sharp, and Haies (the liquidators) announce that they will pay a third instalment of 3*s.* 6*d.* per share, on Monday, Sept. 28, and two following days.

LEEDS, SEPT. 3.—Mining shares have been moderately active, and a few transactions have taken place at reduced rates; quotations remain depressed.—At the Coniston Moorhead Mine, during the month of August, some fine pieces of lead ore have been obtained from the level in the "Shake," some of which will produce from two to three pigs of lead.—JOHN GLEDHILL AND CO.

BOSTON, AUG. 17.—The sales of Picton and Sydney coals have been at 47 per ton, cash. Receipts pretty large, but mostly disposed of previous to arrival. In Anthracite there have been steady retail sales at 9*s.* to 10*s.* per ton. The market for pig-iron remains the same. Moderate sales of Scotch at 35*s.* 6*d.* to 37*s.*; and American at 35*s.* to 37 per ton, cash and four months. In bar-iron the sales have been confined to small lots at previous prices. In Russia sheet-iron, sales of 200 packs at 17 cents per pound, cash.

NEW YORK, AUG. 19.—The market for domestic coal is freely supplied, and prices favour the buyer; the stock is increasing daily; sales from yard at 57*s.* 6*d.* to 58*s.* 6*d.* per ton. Foreign is in good demand, is scarce, and quite firm; the sales include 800 tons L. L. Baker's Gas Canal, to arrive, on private terms; 100 tons Newcastle Gas, to arrive, at 8*s.* and 100 tons Liverpool Gas at 7*s.* 7*s.*; the consumption of the latter is increasing.

COAL MARKET.—On Monday, the market was supplied with 46 fresh ships. The supply of house coal was short of the demand, and business was brisk, at fully last prices for first class, and an advance of 3*d.* per ton on second class sorts. Hartley's and manufacturers' were in steady request, at previous values. Best house coal, 17*s.* to 18*s.*; seconds, 15*s.* 6*d.* to 16*s.* 6*d.*; Hartley's, 15*s.* to 15*s.* 9*d.*; manufacturers', 13*s.* to 15*s.* per ton.—On Wednesday, there were 31 arrivals. The market was brisk for house coal, at fully last day's prices. Hartley's advanced 3*d.*; manufacturers' without alteration.—On Friday, the arrival of 82 ships produced an active enquiry, and a large business was done in all descriptions of coal, at, upon the whole, slightly higher prices. Hetton Wallsend, 18*s.*; Haswell Wallsend, 18*s.*; Lambton Wallsend, 17*s.* 6*d.*; Russell's Hetton Wallsend, 17*s.*; Braddly's Hetton Wallsend, 16*s.* 9*d.*; Tees Wallsend, 17*s.* 3*d.*; Eden Main, 16*s.*; Belmont Wallsend, 16*s.*; Harton Wallsend, 16*s.*; Riddell's Wallsend, 16*s.*; Wharfedale Wallsend, 16*s.*; Davison's West Hartley, 16*s.*; Buddle's West Hartley, 16*s.*; Hasting's Hartley, 16*s.*; 6 cargoes unsold; 130 ships at sea.

LIVERPOOL COAL TRADE.—From the Coal Circular of Messrs. Platt we learn that the quantity of Cannel, coal, coke, and patent fuel shipped at Liverpool in August was 49,205 tons, and in the corresponding month of last year 67,629 tons, showing a decrease last month of 18,424 tons. The total shipments from Jan. 1 to Aug. 31 were 348,523 tons; same period of last year, 408,580 tons—decrease this year, 60,057 tons. The exports coastwise during Aug. were 9915 tons; same month last year, 10,316 tons—decrease last month, 401 tons. Total exports coastwise from January to August, 60,764 tons; same period last year, 49,490 tons—increase this year 11,274 tons.

HARTLEY AND WELSH COAL.—Among the interesting facts brought forward at the Newcastle meeting of the British Association, was that showing that by using a mixture of Hartley and Welsh coal there is less smoke than would reasonably be expected from the combination. A paper on the "Uses of Fuel in Marine Boilers," was contributed by Dr. Richardson and Mr. T. W. Bunning, who had been appointed to be present at certain experiments made with Hartley and Welsh coal; and, to represent the different intensities of the smoke. It was found that while the Hartley made 340 marks, and the Welsh 40, an equal mixture of Hartley and Welsh made only 100. Since these experiments, Mr. Bunning has received a letter from the chief engineer of the *Prince Napoleon* yacht, belonging to Prince Jerome, in which that gentleman states, that for ordinary running they used a mixture of one Hartley and two of Welsh coal; but that if they wished to go at a greater speed they used half Hartley and half Welsh; and when they wanted to go at their greatest speed they used Hartley coal entirely.

THE ULVERSTON DISTRICT.—The discovery of another valuable vein of hematite iron ore has just been made by Messrs. Kennedy Brothers on the Greenscow estate, belonging to Mr. W. A. Mackinnon, M.P., and adjoining the Duke of Devonshire's property near Dalton. Two shafts have already been sunk on the vein, and a third is far advanced, whilst provision has been made for the further development of the mine by the erection of two powerful steam pumping-engines. The present yield of the mine is about 600 tons of ore per week, and it is confidently expected that when the mine has been brought into full operation the get will exceed 1500 tons per week, or 75,000 tons per year, which quantity may continue to be raised for the next half century; indeed, it is estimated that nearly 8,000,000 tons of ore, worth some 2,500,000*l.*, may be raised without exhausting the mine. It seems that the Greenscow Mine has afforded another instance of the importance of perseverance where the prospects are encouraging, although temporarily the results may be unsatisfactory. The grant was originally made to the late Mr. C. S. Kennedy in 1848, and upon the vein being lost in 1855 the shaft was abandoned; the various trial shafts and borings subsequently made to re-discover the vein were altogether unsuccessful until now, when the excellent vein now referred to was met within 10 yards of one of the late Mr. Kennedy's old and apparently worthless shafts. All outlay and anxiety will now be far more than compensated.

MINING IN IRELAND.—We are informed that a discovery of copper ore has been recently made at Ballycroy, in the barony of Erris, in the county of Mayo, on the property of the Rev. W. Palmer, of Whitechurch, Dorset, and that steps will be immediately taken for the full development of the mineral resources of this estate, by the formation of a public company or other combination of moneyed men. It is also mentioned that at Blackrock Bay, on the same gentleman's Irish property, a deposit of barytes of the best colour has been met with. We expect further details, and shall then again allude to the subject.

THE COBRE MINING ASSOCIATION shares have been favourably affected by the official receipt of some intelligence, which is expected to have a very important bearing upon the future prospects of the undertaking. The company originally had the ore from their mines carried down to the coast of Cuba on the backs of mules, a process both slow and expensive. Subsequently (about twenty years ago), they made a permanent arrangement with a local railway company for the conveyance of the ore to the port of shipment, as well as coals, bricks, machinery, &c., to the mines, at—what were considered then—fair and reasonable charges. It has since been ascertained, however, that the rates are half as much again as those charged on other lines in the island, as authorised by the Government. The Cobre Company have accordingly appealed to the Government against the contract for some years past, and have paid the local association under protest. The Government, having now ascertained that there was some legal informality in the contract when it was first made, have declared it null and void. The railway company will doubtless appeal against this decision, but their chances of success would appear to be very problematical. The Cobre Company have paid the proprietors of the line about 20,000*l.* per annum, but in the event of the Government confirming its decision, the cost for the carriage of the ore and necessary materials for use in the mines would probably not exceed 10,000*l.* yearly. The advantages generally received by the Cobre Company are satisfactory. The new lode was first driven on at several points to develop it, and no doubt is entertained of it being the

great north lode which runs through several of the company's mines. There are four smelting-furnaces, three of which are always at work. Some of the poor ores which had been smelted produced as much as 29 per cent. of copper.

THE WICKLOW COPPER MINING COMPANY has ceased to exist as an independent association, and has been amalgamated with the Hibernian Mine Company, the head landlords of the mines worked by it. Its final meeting was held on Monday, when a dividend of 2*s.* per share was declared. The company was formed in the year 1834, with a very small capital. The proprietors soon afterwards obtained a loan of 1000*l.* from the Board of Works, and down to 1858 they worked as a private company under their own deed of Association. In that year they obtained an Act of Incorporation, and have since done a very profitable business, until within the last three years, when the depressed condition of the sulphur trade slightly checked their increasing prosperity. From the formation of the company they have paid dividends to the amount of 278,000*l.* It having long been evident that the amalgamation of the two companies would be highly advantageous to both, measures were taken to procure an Act of Parliament authorising their union, which received the Royal Assent on July 28. The Chairman (Mr. Edward Wright), in proposing the adoption of the report, reviewed the condition of the company's property, and congratulated the shareholders on the brighter commercial prospects opening to them. A vote of thanks was unanimously passed to him and the other directors. A meeting of the Hibernian Mine Company also took place on Monday, when a dividend of 2*s.* per share was declared. Great satisfaction was expressed at the amalgamation of the two companies.

RAILWAY ROLLING STOCK.—The number of locomotives possessed by English railway companies at the close of 1862 was 5140; of passenger carriages, 12,584; of other vehicles attached to passenger trains, 4891; of wagons or trucks used for the conveyance of minerals, live stock, and general merchandise, 153,589; and of other carriages or wagons, 4270—making a total of 180,474. At the same date the number of locomotives at work on Scottish railways was 583; of passenger carriages, 1854; of other vehicles attached to passenger trains, 623; of wagons or trucks used for the conveyance of minerals, live stock, and general merchandise, 27,952; and of other wagons, 188—making a total of 31,553. The railways of Ireland, again, possessed at the same date 373 locomotives, 927 passenger carriages, 423 other vehicles attached to passenger trains, 5513 wagons or trucks used for the conveyance of minerals, live stock, and general merchandise, and 309 other wagons—making a total of 7545. We thus arrive at a total for the United Kingdom of 6393 locomotives (which, at 2600*l.* each, would represent a capital of 16,634,800*l.*), 14,565 passenger carriages, and 197,758 vans, trucks, &c.—making a combined total of 218,716. The value of this immense plant must be estimated at 40,000,000*l.* It may be added that each mile of railway in England possessed last year 23 vehicles of various kinds (including locomotives), while each mile in Scotland had only 18, and in Ireland barely 6. A comparison of this kind affords a valuable means of forming an estimate as to the relative productiveness of English, Scotch, and Irish railways.

To Directors, Solicitors, Secretaries, &c.

IMPORTANT TO ALL CONNECTED WITH PUBLIC COMPANIES.—Now ready, price 2*s.* 6*d.*, A HANDY BOOK OF WHAT TO DO AND HOW TO DO IT, IN ORDER TO FORM ANY MERCANTILE, MINING, AND OTHER JOINT-STOCK COMPANIES. Designed as a PRACTICAL GUIDE for Projectors, Promoters, Directors, Shareholders, Creditors, Solicitors, Secretaries, and other officers. By THOMAS TAPPING, Esq., of the Middle Temple, Barrister-at-Law, London: Published at the *Mining Journal* office, 26, Fleet-street, E.C., and to be had of all booksellers and newsmen.

LEAD ORES.

Mines.	Tons.	Price per ton.	Purchasers.
East Logyias	60	£12 12 6	Panther Co.
Gloglach	30	16 2 6	Stock & Co.
ditto	30	16 2 6	J. & J. Williams.
Cwmystwlth	60	12 13 0	Sims, Williams, & Co.
ditto	60	12 13 0	Panther Co.
Sold on the 24 September.			
Dylife	12	12 16 6	Newton, Keates, & Co.
Llanerchyr	30	13 6 0	ditto
Sold on the 30 September.			
Wheal Frank Mills	45	14 9 0	Sims, Williams, & Co.
ditto	95	11 4 6	Truffry's Trustees.

BLACK TIN.

Mines.	Tons c. q. lbs.	Price per ton.	Purchasers.
Cornubia	5 7 0	£68 0 0	£ 365 19 7—Danbus & Co.
Sold on the 24 September.			
Great Wheel Busy 25 12 1 6		1543 10 9	

COPPER ORES.

Mines.	Tons.	Price per ton.	Purchasers.
Great Laxey (Isle of Man)	32	£3 15 0	St. Helen's Co.

COPPER ORES.

Sampled Aug. 19, and sold at Tyack's Hotel, Camborne, Sept. 4.					
Mines.	Tons.	Price.	Mines.	Tons.	Price.
Clifford Amalgamated	102	£4 16 0	South Tolguis	33	£3 17 6
ditto	101	7 6 0	East Pool	87	4 4 6
ditto	100	3 15 6	ditto	77	3 19 6
ditto	90	4 0 6	ditto	78	3 18 6
ditto	80	7 9 6	North Crofty	55	4 1 0
ditto	74	7 16 6	ditto	53	6 17 0
ditto	73	4 9 6	ditto	51	1 19 6
ditto	70	4 10 0	ditto	49	10 12 6
ditto	65	7 4 0	Tolcarne	59	5 3 6
ditto	64	3 15 6	ditto	55	3 18 0
ditto	40	8 5 6	ditto	48	2 8 6
ditto	34	2 11 6	ditto	23	2 4 0
ditto	22	5 0 0	South France	49	6 0 6
West Seton	82	4 9 6	ditto	48	8 9 6
ditto	63	2 11 6	ditto	42	4 7 6
ditto	61	7 4 6	ditto	5	3 0 0
ditto	59	7 0 0	Wheal Bassett	69	5 17 6
ditto	57	5 5 6	ditto	33	6 0 0
ditto	48	3 16 6	ditto	21	7 16 6
ditto	46	7 10 6	East Bassett	40	7 12 0
Wheal Seton	26	6 10 6	ditto	27	14 8 0
ditto	21	1 7 0	ditto	17	10 13 0
Pendarves	110	0 12 6	North Crofty	45	1 3 6
ditto	70	5 3 0	ditto	24	5 16 0
ditto	50	6 11 6	Wheal Harriett	40	1 16 0
ditto	49	3 17 0	ditto	28	5 6 6
ditto	47	5 2 6	West Stray Park	42	4 2 0
ditto	15	13 14 0	ditto	23	7 4 0
ditto	8	2 1 6	West Tolguis	45	5 18 0
South Tolguis	82	4 4 6	Wheal Eowan	20	2 3 6
ditto	67	4 2 6	North Dolcoath	16	6 11 0
ditto	67	0 3 6	South Bassett	13	3 1 6
ditto	38	8 19 6			

In Chancery, Lancashire.

SCHIELE'S PATENTS—SCHUNCK v. SCHIELE.

Notice is hereby given, that by a deed dated July 14, 1863, executed pursuant to an order of this Court, and duly registered at the Patent Office, London, O. SCHIELE has absolutely assigned to MARTIN SCHUNCK, Esq., the PATENTS, comprising the following inventions:—

- SCHIELE'S TURBINE WATER WHEELS.
- PLATT AND SCHIELE'S SILENT FANS, including AIR PUMPS or GAS EXHAUSTERS.
- SCHIELE'S BLAST ENGINES.
- SCHIELE'S GOVERNORS for STEAM ENGINES and WATER WHEELS.
- SCHIELE'S VENTILATING ENGINES.
- SCHIELE'S CENTRIFUGAL PUMPS.

The North Moor Foundry Company, Oldham, Sole Licensees.
Messrs. Hick and Son, engineers, Bolton, Sole Licensees.
Messrs. Clark and Charnley, engineers, Preston, Sole Licensees.

SCHIELE'S FEED PUMPS.
SCHIELE'S VARIABLE EXPANSION GEAR.
SCHIELE'S LUBRICATION.
SCHIELE'S HYDRAULIC TRANSMISSION OF POWER.
SCHIELE'S HYDRO EXTRACTORS.
SCHIELE'S CONTACT GEAR.
SCHIELE'S CONTINUOUS WHEEL CUTTING MACHINERY.
SCHIELE'S NUT TAPPING MACHINES.
SCHIELE'S OSCILLATION BREAK for GOVERNORS for RAILWAY THINGS, &c.
SCHIELE'S CONTINUOUS SCREW CUTTING MACHINES.
SCHIELE'S APPLICATION of the ANTI-FRICTION CURVE to FOOTSTEPS of SHAFTS, to COCKS, VALVES, &c.
SCHIELE'S HYDRAULIC WEIGHING MACHINES.

Mr. SCHIELE is not authorised, either by himself, or his partners or agents, to receive any orders, or transact any business, relating to the above.

All applications for terms of license, &c., of inventions not already exclusively licensed, to be made to WILLIAM HADFIELD, Esq., civil engineer, John Dalton-street, Manchester; or to the NORTH MOOR FOUNDRY COMPANY, Oldham, who are authorised to treat, on behalf of Mr. SCHIELE, for the same.
LEWIS, DARRISHIRE, AND ASHWORTH, 21, Brown-street, Manchester, Solicitors for Martin Schunck, Esq.

August 24, 1863.

THE NORTH MOOR FOUNDRY COMPANY, OLDHAM

SOLE LICENSEES AND MANUFACTURERS OF
SCHIELE'S TURBINE WATER WHEELS.
PLATT AND SCHIELE'S SILENT FANS.
SCHIELE'S BLAST ENGINES.
SCHIELE'S VENTILATORS for SHIPS.
PLATT AND SCHIELE'S MINE VENTILATORS.
SCHIELE'S AIR PUMPS or GAS EXHAUSTERS.
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MESSRS. C. SCHIELE AND CO. beg to intimate that the PATENTS ASSIGNED by Mr. SCHIELE to Mr. SCHUNCK ONLY COMPRISE Mr. SCHIELE'S OLD PATENTS, taken out prior to 1860, and DO NOT COMPRISE

SCHIELE'S PATENT TURBINE WATER WHEELS of 1863.
SCHIELE'S PATENT SILENT FANS of 1863.
SCHIELE'S PATENT CENTRIFUGAL PUMPS of 1863.
SCHIELE'S PATENT BLAST and VENTILATING ENGINES of 1863.
SCHIELE'S PATENT TURBINE STEAM ENGINES of 1863.
SCHIELE'S PATENT CRUSHING MILLS and HAMMERS of 1860.
SCHIELE'S PATENT WAVE POWER MACHINERY of 1860.
OSMEROD and SCHIELE'S PATENT STONE DRESSING MACHINES of 1862.
Also, that Mr. SCHIELE'S PATENTS for LUBRICATION, HYDRO EXTRACTORS, HYDRAULIC WEIGHING MACHINES, and the APPLICATION of the ANTI-FRICTION CURVE to UPRIGHT SHAFTS, &c., have LONG SINCE EXPIRED, and Messrs. C. SCHIELE and Co., as well as the public in general, have full liberty to make use of these inventions.

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Notices to Correspondents.

* Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be regularly filed on receipt: it then forms an accumulating useful work of reference.

SOUTH FRANCES AND WEST BASSET.—In answer to the query of "One Interested," I beg to inform him the boundary dispute between South Wheel Frances and West Basset Mines may be settled immediately, upon the withdrawal by South Wheel Frances of their opposition to the verdict given in favour of West Basset. The solicitors have had the case for argument, in the Court of Error, in their hands ever since January last, and are not yet agreed upon it. As was foretold by the West Basset committee, in 1857, the South Frances lease will have expired (May 17, 1861) before the termination of these useless law proceedings.—**ANOTHER INTERESTED.**

OLD WHEAT NEPTUNE.—Will anyone connected with this company have the goodness to inform me who are now the directors of the company, and in what way the mine is now carried on? There having been no meeting of shareholders since three of the directors left the board, and I am informed there is little or nothing doing on the mine.—**A SHAREHOLDER.**

MINING IN AUSTRALIA.—In answer to your correspondent in last week's Journal, "A Constant Reader," respecting the Daily, the Welcome, and other mines in South Australia, I beg to say that I shall be happy to give him every information about them.—**ALFRED P. BURT: Jerusalem Coffee-house, Cornhill.**

MINING IN IRELAND.—Mr. J. H. HITCHINS, whose name is so well known to the readers of the *Mining Journal* as the consulting mining engineer of the Devon Great Consols, is now on a mining tour in Ireland. During his stay, Mr. Hitchins will be prepared to consult with capitalists with reference to their mining properties in that country, or to inspect such sets as may be deemed worthy of exploration. This may be considered a desirable opportunity, as Mr. Hitchins has been the introducer of many highly successful adventures.

PATENT ANCHORS.—"J. H. S." (Glasgow).—The works at which Martin's patent anchors are manufactured are at Old Charlton, adjoining Woolwich Dockyard.

PONT PHILLIP AND COLONIAL GOLD MINING COMPANY.—"Your Reader" will find, upon referring to the Journal of Aug. 1, that the half-yearly meeting of this company was held on July 27, and that a distribution of 1s. per share was made out of the profits of the current year, on account of the sixth dividend (free of income tax), 10 per cent. thereon being added to the reserve fund.

WHEAL JANE (Kes).—Perhaps some one concerned will explain how the profits on the two months ending June can be made 500l. 19s. 8d. As I read Mr. Edsall's accounts, the mine cost is only charged for May and June, while the returns include the sales of ore up to August 19. A little present explanation may prevent future dissatisfaction.—**A SHAREHOLDER.**

GREAT MOELWYN SLATE QUARRY COMPANY.—"A Shareholder" refers to the absence of reports from the Great Moelwyn Quarry, and asks if therefrom. If a shareholder, he must know there can be but little to report periodically, as from the statement at the last meeting, in March (for which see the account in the Journal), it was promised that in about two months the whole affair would be in good working order, and I presume there is no reason to doubt that is now the case. In accordance with the resolution of the shareholders, in March last, they will, of course, be summoned together during the present month, when they may reasonably expect to have every information. From some little experience, I have not much faith in weekly reports, such as are generally published, and if the shareholders are satisfied that the concern is genuine an official intimation once in three or six months should be sufficient. The only disadvantage is a difficulty in finding a market for shares of the quarry, if not kept prominently before the public—hence such an advertisement as appeared last week from a broker, in reference to the Great Moelwyn, "An Offer Wanted." This, if genuine, will soon meet with a response. It is bad management on the part of the directors that the quarry is not on the Stock Exchange List: there is not a reason to the contrary.—**A SHAREHOLDER.**

CORRESPONDENCE.—We are compelled, by pressure on our space, to defer the publication of the letters of "A Doggy," in reply to Mr. Robert Ridley; "Lux Obscura," in reply to Mr. H. Brook; "Mentor," on Mining as an Investment; "F.R.," on the New System of Geology; and some other matters, until next week.

THE MINING JOURNAL*Railway and Commercial Gazette.*

LONDON, SEPTEMBER 5, 1863.

Since our publication of the Mineral Returns, in last week's Journal, with which we were furnished by Mr. ROBERT HUNT, that gentleman has received the following additional returns, which, he informs us, will increase the total quantity of IRON ORE by about 4000 tons; DEVONSHIRE (Sharkham Point, &c.), 6486 tons; IRELAND (Ballycastle), 7600 tons.

From the same source we receive the following returns of our Mining Population, as furnished to the Keeper of Mining Records from the office of the Registrar-General:—**CORNWALL.**

Copper Miners	13,494
Tin "	13,869
Lead "	1,721
Iron "	228
Miners returned indefinitely	1,654
Total miners in Cornwall	30,966

COAL MINERS IN ENGLAND AND WALES.

	Coal Miners.	Returned Indefinitely.
Durham	36,639	356
Northumberland	12,611	68
Cumberland	4,374	97
Yorkshire	31,938	84
Derbyshire	10,672	170
Nottinghamshire	6,791	13
Leicestershire	1,888	71
Warwickshire	33,203	260
Staffordshire	2,631	223
Worcestershire	41,764	77
Lancashire	2,813	6
Cheshire	4,490	996
Shropshire	2,639	132
Gloucestershire	5,890	18
Somersetshire	32	721
Devonshire	6,063	490
North Wales	29,292	1,866
South Wales	4	—
Cornwall	—	—

The further returns from the Board of Trade show the increasing prosperity of the country, in a manner which places the figures beyond dispute. The statistical statements of the Government are now before us for the seven months, and the month ending July 31, as respects the imports and exports of the United Kingdom. Taking the exports by themselves, we find that the total declared value of articles, produced and manufactured in this country, was 13,648,840l. for the single month, and 75,663,037l. for the seven months, which is an increase, in the first case, of 1,517,039l. over the same month of last year, when the aggregate was 12,131,801l., and 6,216,559l. as respects the seven first months of 1862, when the total was 69,446,486l. The excess is, therefore, more than a million and a half for the month, and about 900,000l. per month for the seven months of this year as respects the same periods of 1862. Surely nothing can speak in stronger terms of the great advance which England is making, year by year, in every branch of her industry, which not only tends to increase her power abroad in all commercial enterprise, but stimulates internal energy. So long as our shipments increase so must industry prosper, and so long as industry prospers there must be abundance of floating capital to stimulate and encourage every branch of trade and enterprise.

The mining industry of the country keeps its own position in this gigantic stride for the increase of the country's wealth. The total exports, under the several heads which constitute this great section, are given as of the value of 19,538,460l. for the seven months, against 17,537,721l. in 1862; consequently showing an increase of 2,000,739l.; after allowing for deductions in three items, amounting in the aggregate to 46,961l., being 30,324l. in coals and culm, 12,320l. in tin unwrought, and zinc 4317l. The chief increase is in iron, which is 821,642l. over last year; copper, 777,548l.; hardware and cutlery, 325,758l.; lead, 46,739l.; machinery, 52,019l.; tin-plates, 13,917l.; and brass, 10,046l.

Our export in general trade being so excessive, it follows that our traffic in bullion and the precious metals is in favour of this country, our imports in this particular being 17,556,998l., while the exports were 15,832,638l., during the seven months. The imports consisted of 11,425,555l. in gold, and 6,131,443l. in silver; while the exports were 9,414,163l. in gold, and 6,418,475l. in silver.

To Egypt we forwarded, in transit to India and China, 5,920,839l., against only 16,969l. received; to France, 2,929,361l., and imported thence 678,815l.; to Brazil, 1,061,705l., against 41,723l.; to Russia, 2,203,374l., against 655,604l.; to Hanse Towns, 1,361,770l., against 720,141l.; to Spain, 935,114l., against 8113l.; to Portugal, 520,646l., against 36,903l.; to Holland, 211,813l., against 111,921l.; to Malta, 124,615l., against 2319l.; and to Gibraltar, 50,808l., against 16,416l. On the other hand, we sent to Mexico only 207,699l., and received 6,504,382l.; to the United States, 37,555l., and received 4,568,846l.; to Australia, 1721l., and received 3,592,077l.; to Belgium, 93,135l., and received 369,112l.; to Turkey 15,513l., and received 93,543l.; to West Coast of Africa, 39,968l., and received 42,899l.; and to British North America, 54,690l. From Bri-

tish Columbia we imported 12,664l., and 6285l. from British South Africa, without remitting specie or bullion in return.

WASTE OF COAL.

Until recently, and still in the great majority of cases (says Dr. Bruce, in the "Handbook to Newcastle"), Coal is specially burnt to obtain that steam which practice now proves the waste heat from iron furnaces themselves can easily supply. It is within the mark when it is stated that 1,000,000 tons of coal are annually wasted in Great Britain in this way alone. In round numbers, the coke from 3½ tons of coal is used to produce 1 ton of pig-iron, and ½ ton of coal is required to raise steam for the blowing-engines and heat the blast. Practice has proved, perhaps at the risk of some inconvenience and difficulty, that this ½ ton can be entirely saved by using the gases formerly allowed to escape from the blast-furnaces, entailing a loss of close on 3,300,300 tons of fuel annually, or about 20 per cent. of that used in smelting. In the Newcastle and Durham coal field above 2,500,000 tons of coke annually are manufactured, to produce which more than 4,250,000 tons of coal are used. Inflammable gas and solid coke, weighing 1,750,000 tons per annum, in this district alone, find their way, with their attendant heat, into the atmosphere: 500,000 tons of this are probably required to maintain the necessary temperature of the coke-ovens, leaving a clear loss of 1,250,000 tons of fuel out of 4,250,000, or close on 30 per cent., and, probably, more than enough to keep steam-engines of 20,000 horse-power going night and day. Without taking any extraordinary care to economise the heat thus escaping, it has been shown, on a large scale, that 2,500,000 tons of coke, in its manufacture, can evaporate above 30,000,000 tons of water. Peclet estimates that all boiler fires permit one-fourth of the heat to escape by the chimney. Our household fires have much to account for, as in them, it is calculated, 19,000,000 tons of coal are annually consumed; and, looking at the faulty construction of our national firesides, they waste, probably, one-third. Supposing the average loss from all sources to be 25 per cent., we shall have to answer to posterity for something like 20,000,000 tons of coal out of the 83,635,214 tons raised last year in Great Britain, according to Mr. Robert Hunt's estimate in the Government Statistical Returns. Recently, in chemical works and in other manufacturing operations, as well as in steam-engine boilers, various plans have been put into practice to avoid a loss which is truly one of great national importance.

A DECENNIAL RETROSPECT OF THE SCOTCH PIG IRON TRADE.

The stock of 270,000 tons in warehouse-keeper's stores was in 1853, as the stock to-day of 278,000 tons is, chiefly held by a few wealthy houses. From July to October, 1853, the price fluctuated between 58s., 68s. 6d., and 62s. 6d., according to the pacific or warlike news from the East. The purchase of 50,000 tons at 65s. to 75s., principally on French account, owing to a modification of the prohibitory duties on iron into France, sent the price up to 80s. per ton.

Notwithstanding an impending war with Russia, the price rose from 70s. in January, to 92s. 6d. by the end of May, 1854. In 1855, extensive transactions were made at from 55s. to 82s. 6d. per ton. On the inauguration of peace, in 1856, large purchases were made at from 70s. to 81s., but the unsettled question with the United States assuming an unsatisfactory aspect, a decline to 72s. 6d. ensued.

Though 131 furnaces were in blast in March, 1857, the price rose from 72s. 6d. to 83s. 6d. by the end of June. Towards the end of that year commercial disaster caused a decline to 57s. 6d. Since then has existed a period of depression in the iron trade, the price fluctuating between 50s. and 60s. per ton.

The local consumption has increased since 1853 about 100 per cent., whilst the production has only increased about 50 per cent. Owing to the peculiar adaptation of Scotch pig-iron for foundry and forge purposes, the sphere of its consumption is rapidly extending, and it is penetrating quarters never reached before.

The iron shipbuilders on the Clyde, as well as elsewhere, were never so active. Rails and bars have advanced 10s. to 15s. per ton. The effects of the modification of the import duties on iron into various foreign and colonial countries have yet to be experienced. The abundance of money, a magnificent European harvest, the progress of sanitary improvements, the development of the railway system throughout the world, are extending and consolidating the foundations of increasing prosperity in this branch of our national industry. Price to-day (Sept. 3), 55s. 6d., and the price ten years ago, 65s. per ton.

LITERARY NOTICE.

A Practical Treatise on Mining, Land, and Railway Surveying, Engineering, &c. By H. D. HOSKOLD, Mining Engineer and Surveyor. London: Atchley and Co., 106, Great Russell-street, Bedford-square.

This is one of the most useful books on the subject of mine surveying which has ever yet been published. The work is dedicated to the Dean Forest Iron Company, for whom it appears the author is mining engineer; the book has, therefore, been written by a thoroughly practical man, and it is consequently very truly what the author has denominated it—a practical treatise. In the preface the author says that he has, to the best of his ability, given a practical solution to the various problems which have occurred to him in his own practice, in the hope that the work may be the means of introducing a more accurate system of accomplishing what is so essentially important in all mining operations—correct plans and statistical records of all subterranean drivages and excavations.

As journalists of mining, in both the engineering and commercial aspects of the art, it has often been our painful duty to record serious accidents arising from erroneous surveying and incorrect plan making; we have also from time to time published lengthy correspondence on the subject of mine surveying by means of the common miners' dial, some correspondents advocating its use in preference to a circumferentor, or to a theodolite; and others maintaining that, owing to the many causes of error to which it is liable, its use in mines should not be tolerated nor permitted. We are glad, therefore, that a man of the experience and evident ability of Mr. H. D. Hoskold has brought this matter before the mining public in so prominent a manner, and we trust that every mineral surveyor in the kingdom will assist in bringing the art of mine surveying to so great a perfection of accuracy as is elucidated and advocated by the author of this book. Mr. Hoskold has invented improvements in the theodolite, rendering it thereby more suitable for surveying subterranean works: this improved instrument is called Hoskold's Miners Transit Theodolite, and of this the book contains two well-executed lithographic views. In addition to these, the work is illustrated by many woodcuts and drawings; and, indeed, the only comment we need make on the excellent manner in which the printing, binding, and embellishing have been executed, is to remind our readers that Atchley and Co.—a well-known firm—are the publishers. The subjects comprised are—an introduction by Mr. Mark Fryar, F.G.S., mining engineer, &c., Glasgow; the errors of the magnetic needle; practical geometry and trigonometry; description, use, and adjustments, of the miners' new transit theodolite; a new plan of setting out underground railway curves; underground levelling; construction of longitudinal, transverse, and geological sections of mines, &c.; tables of distances from planes of the meridian and latitude, tables of natural sines, secants, tangents, ratios of inclined planes, &c.

The transverse tables will be of great value to surveyors, and the author seems to have used every precaution against error in constructing them. We most cordially recommend this work to our mining friends, and most sincerely trust that the author of such a useful book may receive suitable remuneration for the great labour which he has accomplished.

ENGLISH AND FRENCH METAL.—A third trial of French and English armour-plates took place at Portsmouth on Wednesday, under the supervision of Captain A. C. Key, C.B., commanding Her Majesty's ship *Excellent*. The plates comprised four from the French firm of Pettin, Gaudet, and Co., two of 4½ in. and the remaining two of 5½ in.; one from Messrs. John Brown and Co., of Sheffield, of 5½ in.; and one from the Millwall Company, of 5½ in., the average length of the whole being 15 feet, and their breadth 3 ft. 4 in. Pettin and Gaudet's two 4½ in. plates received six and seven shots respectively, and both proved to be of a very inferior quality. They had both very extensive cracks and separations of the metal, and showed cracks of greater extent than has been done by the French made plates on any former trial. Messrs. Brown's plate and that of the Millwall may be considered about equal, and as the best by far of the six tested. The French plates proved to be far below the average of "A 1" plates, and very inferior indeed to the two first plates which were tried at Portsmouth from the same firm. M. Gaudet, who was present during the trials, expressed his astonishment at the results as regarded his plates, and said that no such result had even attended any

trial of them in France. Capt. Harrison, one of the members of the Iron-plate Committee, was present during the firing, as were also the respective representatives of the Millwall Company and Messrs. John Brown and Co.

CANNOCK CHASE, AND ITS COAL MINES—No. III.

BY WILLIAM MONTGOMERY.

The system of keeping a weekly statement of the production and disposal of the coal at the Beaudesert Collieries appears to have originated with William, I think, fifth Lord Paget, at the close of the 17th century. From these statements a thorough knowledge is obtained of the whole system of mining, the value of the mineral obtained, and the wages paid for getting it. I will select two, at intervals of about seventy years, as examples. In the month of August, 1749, George Booth was the bailiff of the colliery, and the value of the coal raised during the previous year was 1025l. 11s. 2d.; the cost for getting being 628l. 1s. 3d. It is somewhat singular that the quantity raised in the week ending Jan. 21 should be the lowest during the year, its value being but 12l. 1s., against 8l. 0s. 9d. expenses. The highest rate was for the week ending Oct. 15, when the value was 37l. 6s. 8d., against 18l. 14s. 10d. In only one instance, Jan. 14, did the cost, 27l. 13s., exceed the value, which reached but 13l. 10s. "Coal remaining on the banksman's hands," and unsold, was 93l. 17s. 8d. And, after deducting all expenses, there remained a profit of 351l. 7s. 11d. The miners at this time worked in pairs, and the wages of each pair for a week of six days were 10s. "Southing" was a constant source of expense, and carried on principally by a man and boys. Boring appears also to have been often resorted to, but the instruments for the purpose were by no means available for extensive undertakings. Sinking a pit in the Old Park was charged at the rate of 4s. per yard.

The year ending June 30, 1804, shows a considerable increase in the value of the coal raised here, but the profit does not rise in proportion. The total amount brought to the surface was of the value of 4763l. 3s. 10d., the cost of getting 4045l. 19s. 9d., leaving a profit of but 717l. 4s. 0d. In this year ten pits were in work during the winter months, and seven during the summer, all of which would appear to be named after the chartermasters working them. The greatest amount of coal raised was in the week ending Dec. 10, 1803, valued at 121l. 16s., against 63l. 11s. 6d., and the lowest 22l. 10s., against 12l. 18s. 4d., for the week ending July 23. There are several items showing a considerable loss in the week, thus—July 30, coals got 33l. 15s., cost of getting 42l. 17s. 3d.; Jan. 14, 1804, coals got 75l. 12s., cost of getting 145l. 7s. 3d.; but in numerous instances the cost scarcely amounted to one-half the value. Against the receipts comes a long list of tradesmen's accounts, carriage of timber, repairing of roads, and other matters, and for every year over the interval included various sums, or "allowances," to probably decayed or maimed miners, Christmas boxes, and "surplus of coals distributed to the poor." In the year 1784 the item for this purpose, "by her ladyship's order," being 45l. 18s. 1½d. The cost of Cannel raised for this year's consumption was 115l. 14s. 0½d., at which sum it was valued. In the year 1800 the coals brought to bank amounted to only 895l. 7s. 7½d., the cost of which involved a deficiency of 58l. 2s. It appears the two coals worked were sold at the rate of 4s. and 5s. per dozen baskets, or horse loads—the quantity drawn up by man or horse at one time, and which, if we may judge according to a similar mode of working still in force in the Churnet Valley, and the wild gulleys near Axedde, would be each a little over 1 cwt. At this rate the quantity raised in 1749 would slightly exceed 5148, and that in 1804, 16,459 dozen loads, reckoning at 4s. per dozen. After the year 1810 these collieries gradually died out, and in 1816 were entirely closed. That a considerable quantity of the shallow coal of the whole area has been mined is clear enough, but none of the deeper coals have as yet been touched, and much of the shallow, including the Cannel, remains to be worked. After the closing of the Beaudesert pits, a Mr. Turner opened Hazelslade Colliery, between the Old Park and Hednesford, but in 1824 this was abandoned, since which time until the present no effort has been made to re-open the ancient and valuable mines of this particular district.

There does not appear to be any reason to suppose that the ironstone anciently smelted in this locality was obtained wholly on the spot. Several bands of ore intersect the clod of the upper beds of coal, and some might there be found good enough for the purpose required; but the greater or more valuable part would be brought from a distance in bags or baskets, attached to the backs of horses—pack-horses then superseding other ordinary modes of conveyance. One of the stones then wrought appears to have been the "Silver Thread," from the Walsall district, and a somewhat inferior ore from Cheslin Hay. Coal was not then much used in smelting, but the process depended chiefly upon charcoal, of which the Chase afforded an abundant supply. Where wood abounded the smelter prepared his works, it being a more expeditious and reasonable system to bring the raw mineral to the wood, than the wood to the mineral; and it is to this circumstance that numerous indications of such operations are to be met with far beyond the limits of coal fields.

According to various writers of the 16th, 17th, and 18th centuries, it appears that long before that period iron was made in what were termed foot-blasts, or bloomeries, by men treading the bellows, by which process they could produce about 1 cwt. of metal during 24 hours, leaving as much iron in the slag as they got out. The means employed in preparing the ore for the bloomery in the 17th century were simple. It was placed on the open ground, and calcined with wood and charcoal, or occasionally coal. This was called annealing, and generally occupied three days. While this was being done, considerable quantities of charcoal were burnt upon the furnace without blast, to season, or bring it to the necessary heat, on which the calcined ore was taken in baskets, and thrown in—one of ore to one of charcoal. These furnaces were carefully built, the hearth being square, the sides descending obliquely, and narrowing towards the bottom, like the hopper of a mill. Where these oblique walls terminated, which are termed boshes, four other stoves, set perpendicularly, were joined, which formed the square or hearth in which the ore was received. They had curious names for these four walls—the turn, the windwall, the timp, and the back wall; and according to the manner in which they were built, so they supposed was the quality and value of the iron regulated. The bellows usually had their entrance into the furnace between the bottom of the boshes and the bottom stove, and were placed nearer or further off, according as the ore and metal required. The bellows were worked by a wheel, kept in motion by a stream of water; and under the furnace were made, in parallel lines to the stream, five or six troughs, to drain away the moisture from the furnace, "for should," says the writer, "the least drop of water come into the metal it would blow up the furnace, and the metal would fly about the workmen's ears, from which cough they must have a conical pipe, about 9 inches at bottom, set to convey the damp from them into the open air, which, too, otherwise would annoy the workmen even to death."

The bellows were large and powerful, and arranged in pairs, a constant and strong blast being kept up by the alternate depression of each by the action of the wheel. In three days the metal became somewhat fluid, but it was not till the end of a fortnight that a "sow and piggs," as they were termed, could be run, and the process subsequently repeated once in twelve hours. The sow was the larger furrow, made next the timp, in the sand placed before the furnace, and the pigs were smaller, generally 24 in number, but regulated in size and number, according to the quantity of metal to be run. Before the metal was quite cold it was broken, which only in that condition could easily be done, into short lengths for the forge. From 2 to 3 tons of cast-iron could then be obtained in the 24 hours, which was considered a remarkable achievement, in comparison to the more ancient system of men-worked bloomeries.

The forges were of two kinds—the finery and the chafery, which generally stood together under the same roof, and were worked by bellows compressed in the same way as those of the furnace, but not so large. In these forges the metal was subjected to five several heats, or processes, before being perfectly wrought into bars. In the finery it was melted down to what was termed a loop, or thick lump, which was then taken to the "great hammer," raised also by the motion of a water-wheel, and worked into a square, called a "half bloom." It was then replaced in the finery for an hour, and again brought to the same hammer, to be worked into a "bloom"—a "square bar in the middle, and two square knobs at the ends, the smaller end being called the ancony and the greater the mocket head." This terminated the work of the finery. The bloom was then taken to the chafery, the ancony end first heated for a quarter of an hour, then taken to the hammer, and beaten into a bar, and the process repeated with the mocket head, which being larger required two heats before being wrought into the shape and size considered proper for market. The iron intended for rods was then taken to the slitting mills, an invention of the middle of the 17th century, and broken cold into short lengths by one of the wheels, also worked by water. After his it was well heated in a furnace, drawn by rollers to a greater length,

and then put through the cutters, which were of various sizes, and bound into faggots for sale. Four kinds of iron were manufactured by this process; the first and meanest was called yellow shear, the second cold shear, the third blend metal, and the last and best tough iron; the particular kinds of ore used giving the quality.

Both furnace and forge were then at work in various parts of the Chase, besides the Old Park and Radmore. In a valley, watered by a remarkably pure stream of water, running up from Rugeley to Hednesford, were several of these works, the site of one of which, pulled down in 1805, is now occupied by the plating mills owned by Messrs. Cheshire, Manners, and Co. The first of these stood close to the Furnace pool, at Hednesford; lower down was Beyland's pool furnace, then Kankwood pool, followed by the Slitting Mill pool; and at all these places are quantities of cinders, probably thousands of tons, most of which may be advantageously used in the manufacture of particular kinds of iron. Some of the old dilapidated works are still remembered, and appear to have been built of brick, on stone foundations. At what period these works were erected, and the time of their disuse, are now unknown; they were at full work, at least, during the greater part of the 17th century, and, probably, only gave way in consequence of the introduction of coal into the manufacture of iron in the neighbourhood of Wednesbury, where the stone and coal were ready for use side by side.

REPORT FROM NORTHUMBERLAND AND DURHAM.

SEPT. 3.—The Coal Trade remains as last reported: we have no new feature to notice. The Iron Trade continues good, with an upward tendency, and as the season advances the coal trade is expected to improve also. The wheat harvest has been much obstructed, and the very valuable crops endangered by heavy falls of rain, with dull, damp, misty weather. The use of reaping-machines, worked by horses, is almost universal in this district: their performance is highly spoken of, the work being done much better, as well as cheaper, by this mode than by hand labour; and in one instance, near Carlisle, the wheat was cut, threshed on the spot, and taken to the mill, made into bread, and dispatched by rail, in the form of a box of biscuits—all these processes being completed in about nine hours.

A share in the valuable steam coal colliery of Seaton Delaval will shortly be offered for sale. This colliery is one of the most valuable in Northumberland, the produce being known as "Hasting's Hartley." It is situated in the centre of the district, being seven miles from the Northumberland Dock, on the River Tyne, and two miles from the Port of Blyth, with both of which shipping places it is connected by railway. The amount of the share to be offered for sale is one-seventh.

The new rolling-mills at Jarow have been in full operation this week, and some of the largest plates of iron have been rolled over attempted. On Tuesday, two were rolled of immense size, the length of one being 50 feet 10 in. by 2 feet 6 in. x ½ in. Another measured 48 feet in length, and of similar breadth and thickness. These are believed to be the greatest lengths ever accomplished in the history of iron making. The quality of the iron is also good, being made on the spot, of the best Cleveland ore, with an admixture of hematite from the Cumberland iron mines.

The meeting of the British Association in Newcastle continues to attract very great interest and attention. The subjects introduced at the various sections by the reading of papers, and the discussions thereon are of considerable value, some of them possessing a local interest, as connected with the coal and iron trades. Among the questions introduced into the address of Sir William Armstrong, those possessing most local interest are those which refer to the duration of the coal field, and the economic use of coal. Respecting the former question, various opinions will be formed, but as bearing upon this question the paper of Mr. Dunn, read before the Geological section, on Saturday, "On Coal in the Red Measures," is deserving of close attention. The President evidently assumes that the extent of all the important coal fields in Great Britain have been ascertained, but this will prove fallacious to suppose that the extent of the coal fields of Britain and the Continent have been discovered with any degree of accuracy is absurd. New coal fields, of great extent, will continue to be found as geological knowledge progresses; many instances of this kind might be adduced from the history of coal discovery, the majority of cases certainly having been, when discovered, merely continuations of coal fields formerly well known, but supposed to be terminated by some disturbance or change in the stratification.

In this case the appearance of the Red Sandstone measures, against which the coal appeared to terminate at Maryport, was supposed to be the final termination of this valuable coal field in that direction; no doubt whatever was expressed on this point until lately. A paper was read by Mr. Dunn before the Mining Institute some time ago on this subject. In this paper the author advocated the view that the Whitehaven and Maryport coal field would be found to extend underneath those Red measures to the north and east, and would thus ultimately be found to be identical with the coal field of Cannock, thus adding a large area, containing an immense amount of coal, in addition to the fields already fully proved. Mr. Dunn supported his view by various evidence collected from bore-holes, traces, &c., which he had collected; one very significant hint being that quarries of coal are found on the mountain ridges of Kirkcubright, on the opposite side of the Solway Firth. Since that paper was written additional explorations have been made at the Ellenborough Colliery, at Maryport, and at Aspinia, in the range of the Red measures to the north-east, which have thrown much additional light on the subject; and this appears to support the opinion that ultimately a large tract of coal will be found underlying these Red Sandstone measures, the extent of which cannot be determined; but, should this prove correct, and the bottom of the coal basin prove to occur near Silloth, as conjectured by Mr. Dunn, a coal field of several miles in extent from north to south, and also about the same extent from east to west, containing several good seams of coal, will be found a circumstance of the greatest consequence, not only to the commerce of Cumberland, but also to that of Britain generally.

With respect to the economic use of coal in the working of steam-engines, and for various other purposes, including domestic consumption, so particularly alluded to by the President, its importance is only second to that of the duration of the coal beds. With respect to the use of coal by steam-engines and furnaces of various kinds for manufacturing purposes, the paper of Mr. Siemens has a direct bearing on this important question. That great improvements will shortly be effected in this respect, and also in the consumption of smoke, cannot be doubted.

The objects aimed at by Mr. Siemens, and which he has already achieved, to a great extent, are of the most valuable and comprehensive character. These may be classed as follows:—1. Saving of fuel; 2. Consumption of smoke; 3. Increased production of iron in the smelting processes. The importance of the objects aimed at may be inferred from the fact (as stated by him) that by means of the application of his regenerators, a complicated system which cannot be described here, a saving of fuel is effected of 50 per cent., while smoke is entirely prevented. It appears also from his paper that when the coke ovens are placed near blast furnaces, several most economical and admirable arrangements can be made. The separation of the coke from its gaseous constituents is effected without losing the latter, and the puddling of the iron is effected by means of the gas generated in producing the coke necessary for the blast furnace in producing the pig-iron. The gas resulting from the regenerative coke oven may be used to heat the blast and boilers connected with the blast furnace. These latter improvements are now in course of being carried into effect on a large scale. In the application to re-heating and puddling furnaces, a saving of iron has been effected, owing to the mildness of the gas flame, of from 3 to 4 per cent. of the entire quantity put in; the iron also welds more perfectly than it does in the ordinary furnaces. Smoke is entirely obviated.

The gas engine of Mr. Lefebvre, of Paris, stands in the annexe of the Exhibition—that is, in the Corn Market—where it has been daily worked, being used for the purpose of driving a printing machine. It is a small horizontal engine, having the appearance externally of an ordinary high-pressure steam-engine, but, as is well known, the motive-power employed is not steam, but carburetted hydrogen—gas after explosion. The ordinary street gas is supplied to the cylinder by means of a pipe, and to produce each stroke of the engine the gas is exploded by means of a battery placed contiguous to the engine. The expansive force of the gas after being exploded being the motive-power; as this gas expands to 12 times its original bulk after explosion, this is the measure of the force obtained, and, of course, this cannot be exceeded. This is the maximum power that can be obtained by this process. The engine works well and regularly, but the economic value of it is rather difficult to obtain on the spot, as there is no means of ascertaining the quantity of gas consumed. This might easily have been got by means of a meter placed at the branch. The working of the battery will also constitute part of the working cost of the engine.

It is certainly a most ingenious machine, and appears to be successfully applied for the purpose of printing machines and other small affairs. One recommendation of it will, therefore, be that it can be used in situations where the erection of a steam-engine would be objectionable. It occupies little space, and is very compact. But comparing it with the steam-engine, for general practical purposes, it will certainly not stand the test for a moment. So far as we can learn, the working cost of this engine, as compared with the steam-engine, is as from 2 to 1 to 2½ to 1, or, in other words, its cost per horse-power per hour is from 2 to 2½ times greater than that of the steam-engine. Should this prove correct, it is a fact of the most injurious kind against the otherwise very ingeniously constructed machine. However, had it been possible to get exact data on the spot, it would have been more satisfactory to the public; but the inventor, or some of his assistants, are to blame for this omission.

The paper of Mr. Marley, "On the Discovery of Rock Salt at Mid-diesboro," read before the Geological section yesterday, excited much interest. The discovery is one of the greatest importance to the district, and will, doubtless, cause the erection of numerous chemical works on the Tees, as rock salt is the mineral most largely used in the making of alkali, &c. The salt was met with in a large bore-hole, undertaken for the purpose of getting a supply of water—the depth to the top of the rock bed being 1206 feet, and the borer has passed through 100 ft. of salt rock, but has not reached the bottom of the bed. Of course, no idea can be formed as yet as to the area or extent of this most extraordinary and valuable deposit; but there is little doubt it will prove of immense extent.

In connection with this subject it should be remembered that a very rich salt spring exists at Birtley, near Chester-le-Street. This spring was met with at a fault in the coal measures, at a depth of about 120 feet (we cannot give the exact depth). It contains a large quantity of salt, and salt works were established here, and successfully carried on for many years, but during the last few years they have been dormant, having been relinquished through some whim of the owner, who was not dependent upon them for support. Salt of excellent quality was made from this spring, which is very abundant, the water being first pumped to the surface, and afterwards the salt deposited in iron vessels.

A paper was read yesterday, the joint production of Dr. Richardson and Mr. T. W. Bunning, "On the Uses of Fuel in Marine Boilers." The account given by these gentlemen of the experiments conducted by them, in order to ascertain the qualities of the Hartley and Welsh steam coals, exhibits their real qualities in a clearer manner than has ever been accomplished previously, and also in a manner which proves most conclusively the suitability of the Hartley steam coal for use in the British Navy, or by any other navy or steam navigation company, in at least equal proportions to the Welsh coal. These gentlemen were appointed to be present at certain experiments made with Hartley and Welsh coal; and to represent the different intensities of the smoke produced, it was found that while the Hartley made 3-40 marks, and the Welsh '40, an equal mixture of the Hartley and the Welsh made only 1-00.

Those experiments, therefore, dispose of one part of the question in the most satisfactory manner—that is the smoke question; and the other question as to the quantity of steam evaporated is very plainly settled by the following:—Since the experiments alluded to above Mr. Bunning has received a letter from the chief engineer of the *Prince Napoleon* yacht, belonging to Prince Jerome, in which that gentleman states that for ordinary running they used a mixture of one of Hartley and two of Welsh coal; if they wished to go at a greater speed they used half Hartley and half Welsh; and when they wanted to go at their greatest speed they used Hartley entirely. After this we shall surely hear no more about the superiority of Welsh coal, as the above trials must be considered the most important that could possibly be found.

The sectional meetings of the British Association were brought to a close yesterday. The meeting, on the whole, is allowed to have been one of the most successful ever held, a vast amount of interesting matter having been presented in the form of papers, &c., much having been furnished by local gentlemen and manufacturers, which will hereafter prove of great value in all operations similar to those referred to.

The most remarkable object in the Central Exchange is the working model of Mr. Hawthorn, the eminent engine builder of Newcastle, representing and fully elucidating his proposed new mode of Railway Traction. Respecting the merits of this invention, and its probable success or otherwise, there are, of course, various opinions; but respecting the ingenuity displayed, and the perfection of workmanship shown in the construction of the model, there can only be one opinion. The idea here worked out is most ingenious and beautiful, and that it will prove useful, either in its present shape or after some slight modification, and, in fact, the place for which it is intended in the railway system, we have no doubt whatever. That the working of the locomotive-engine in tunnels, such as that occurring in the underground railway in London, lately completed, is highly objectionable, and all but impracticable, is fully acknowledged; at any rate, great inconvenience is felt from the effects of the steam smoke, &c., the products of the locomotive-engine employed. The adoption of Mr. Hawthorn's invention will entirely obviate this, as the steam power employed is a stationary engine placed at the end of the tunnel. This power is continued throughout the whole length of the tunnel by means of ropes, and a very ingenious application of sheaves. The rope and sheaves being carried between the two lines of road, and attached to these sheaves are shafts which extend to each of the roads, on which are the wheels, which, by an ingenious arrangement, become the driving wheels of the train or carriage, for each carriage is provided with the means of locomotion. By the arrangement of the ropes in a diagonal form on the sheaves, every alternate shaft has a reverse motion—that is, No. 1 sheave moves in one direction, No. 2 sheave moves in the contrary direction, and so on. This enables the carriage, or train composed of a number of carriages, to be moved either up or down the line as required; this is accomplished by means of two levers or flat-bearing surfaces, placed underneath each carriage. In addition to the pulleys having contrary motions, they are not placed in a line, but each alternate pulley forms a line; and, as there are two levers or bearing surfaces on each carriage, each of them can be placed in contact with either of the lines of pulleys required, and by this means the train or carriage is propelled in any direction.

Thus the lever and pulley form the working bearings, and are the mode of traction adopted. This mode of traction may be compared to the *friction-wheels* adopted by a Glasgow engineer (we forget his name), instead of toothed-wheels, and which answer the purpose admirably, so that there can be no question as to that point. And it must be remembered that the weight which, in the case of the use of the locomotive, is mainly thrown on one point—that is, on the point where the engine and tender is at any given time, is in this case equally, or nearly so, distributed over the whole length of the train, each carriage being propelled by the application of the apparatus we have described. It must be noticed, also, that the guard who accompanies each carriage (which are intended to be of great length, and to carry from 20 to 120 passengers) has complete control of it; so that a carriage or train, by the combined action of each guard, can be propelled forward, or brought to a stand, at any point at will. There can be no doubt, also, that by this mode of traction heavier gradients may be worked than can be ascended by means of the locomotive. Such are the leading features of the ingenious invention, which can, however, be best understood by an inspection of the excellent working model to be seen in the Central Exchange Exhibition in Newcastle. The design of the inventor is that it should be adopted for use in tunnels, or underground railways, where the locomotive is objectionable; but its real utility, and the extent to which it can be applied, can, of course, only be determined by practical experiment.

In consequence of the breakage of the shaft gear of the Burradon Colliery, on Monday, about 200 miners were in danger of being confined in the pit without any early means of escape. Under the guidance of some of the more experienced colliers, the party sought a passage to the shaft of Seghill Colliery, which is about three miles distant; and, though constantly exposed to danger from disturbing stoppings, &c., they steadily made their way from where, if they had been obliged to stay longer, they must have run a much greater chance of losing their lives. The men persevered amidst difficulties, and, with good guidance, had got through half the distance between Burradon and their destination, where they were met by Mr. Rendall, viewer of Seghill, with a party. Their way thenceforward was rid of the most serious obstacles, and they reached Seghill without one of the number having sustained any injury.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

SEPT. 3.—The Ironmasters of North Staffordshire, as anticipated last week, have followed in the footsteps of those in the South of the country—in raising the wages of puddlers 1s. per ton, and in advancing the price of iron to 7l. 10s. for bars, 8l. for hoops, and 9l. for plates. Unlike the employers in the southern coal field, however, they decided at once to advance the wages of mill and furnacemen, stock-takers, blast-furnace men, &c., by the amount taken off their wages at the last reduction, and they increased the wages of miners from 3s. to 3s. 6d. per day. By taking this decided course any struggle with the men has been avoided, and so far there appears no difficulty in getting orders at the advanced rates. In South Staffordshire, where the question of the wages of other iron-workers besides the puddlers was left open by the meeting of the trade, the proprietors of mines west of Dudley decided, on Friday, to advance this coal men from 2s. 6d. to 2s. 9d., and thick coal men from 3s. 6d. to 4s. per day. At a meeting of mineowners east of Dudley, held at Wolverhampton, on Wednesday, a similar course was determined on, which will, no doubt, adjust the difficulty which was arising with these classes of men. It must be remembered that this is not really the rate of wages for a day's work, but that a certain "stent," or amount of coal or ironstone getting, as the case may be, is recognised as a day's work, but a good workman can often do a day and a half's work in a day. The price of coal has been advanced 1s. per ton, and there is a better demand. With regard to the other iron-workers, besides puddlers, a good many of the masters are giving an advance of 10 per cent., which will, no doubt, be the rule. The result is that at the present moment the men are receiving a larger proportion of

the price of iron in wages than has been the case for some time past. It is hoped that iron may go up at least 10s. a ton more, and the marked houses now decline new contracts at the present rates, which are an advance of 10s. per ton.

Pig-iron is quoted from 5s. to 7s. 6d. per ton higher than it was a fortnight ago, and actual orders are at 5s. advance. The trade is in a peculiar state, and the course of the demand for the next few months will be anxiously watched, with a view to see whether the advanced rates, and the further rise hoped for, can be secured.

The unsettled state of the wages question has led to meetings of the men in different parts of South Staffordshire, and the opportunity has been seized by delegates to impress on them the importance of banding into unions. Mr. Farrell, who is connected with a paper which desires to represent the working miners, and a Mr. Hickman, have addressed meetings, urging combination. The advance of wages will probably do much to check this movement. There is naturally great distrust of these unions, for the unwise courses to which they have so often urged the men; but if they could exist for any practical object locally, as for making provision against accidents, sickness, or old age, or of better enforcing the provisions of the Mines Inspection Act, they might do good, by awakening reflection, and developing self-denial amongst miners. A threatened strike of spike nailers at Sedgley, for an advance of 3d. per cwt., has been averted by the masters granting the advance.

At a recent Petty Sessions at Wellington, charges were brought against several chartermasters under the Lilleshall Company for employing women at certain pits, contrary to Act of Parliament. The informations were laid by Abraham Roper, but failed, owing to some technical informality. A man named Bailey, residing at Rag-field (summoned at the last meeting), was on Tuesday charged with a similar offence. Mr. Bartlett, of Wolverhampton, supported the information, and Mr. Smallwood defended. Abraham Roper was then called, and deposed that on a certain day he visited the defendant's pit, and saw two girls at the mouth of the shaft performing the duties of a bankman. They looked on "doubles," and gave the signal to the engineman, and men were directly afterwards drawn up. A man named Taylor corroborated Roper's statement. Mr. Bartlett then proceeded to call Mr. Jones, mining agent to the company, to prove that the defendant was chartermaster of the pit, but he refused to answer any questions until he had been paid the sum of 5l. 5s. Mr. Bartlett said that the idea of paying this sum was preposterous; Mr. Jones evidently wished to throw an obstacle in the way of the law, and he thought it very wrong for him to do so. After some further conversation, witness agreed to give evidence without remuneration, and, in reply to questions, he swore distinctly that defendant was not chartermaster of the pit in question, and the case was, therefore, dismissed, the Bench ordering Roper to pay the cost incurred, and 1l. for the advocate's fee.

REPORT FROM DERBYSHIRE, YORKSHIRE, AND LANCASHIRE.

SEPT. 3.—The most noticeable feature in connection with the Iron Trade in these counties, this week, is the special meeting of ironmasters called to consider the question of wages. Notices having been given by the puddlers and those engaged in the manufacture of finished iron in Staffordshire, and several parts of Yorkshire, for an advance in wages, it was deemed expedient for the employers of labour to take some decisive step in the matter. It was unanimously agreed to give the ironstone getters 3d. per day, and the colliers 6d. per day advance. The orders for manufactured iron this week have been far more numerous than of late, but there is an entire absence of speculative purchases. During the past week several large orders have been given out for railway ironwork. Sheffield has also fallen in for a large supply of railway springs, and, at those establishments in Yorkshire where the rails are mostly made, there is great activity evidenced for rails and railway rolling-stock. Pig-iron is in better demand, and the rates have been more steady during the week than for some time past. The Coal Trade is on the improve, notwithstanding the generally depressed state of the manufacturing districts. In Yorkshire the trade has been gradually improving, and the demand for export has so far increased as to afford sanguine hopes of a better state of things for the winter months. The London and southern markets have been more healthy than usual at this period of the year; and, although we have had a dull trade, the demand has been such as to afford much encouragement for the future. At most of the collieries in Yorkshire and Derbyshire the men have been put on full time, and there is a better prospect of an improved trade than at any recent period. We have also a brisk enquiry for coke and hard coal for locomotive purposes. The Derbyshire hard coal is now in great request in those districts in which steam coal is used, and we have now a largely increased demand for the same.

The great feature of the week in lead mining matters has not been the discovery of a fresh vein of ore, from which great things were anticipated, but the sale of the plant of the North Derbyshire Mining Company, embracing everything workable or portable at the mine. There was a large attendance, and the biddings were spirited. The large Cornish pumping-engine, which cost 2000l. some time ago, was knocked down for 1000l. to Mr. Fairburn, the secretary; of course, it was understood to have been bought in at that figure. The other portions of the plant sold very well, and it was remarked that the old shareholders would get a larger dividend on the winding-up of the affair than was anticipated.

The local stock and share markets have been inanimate during the week, and the quoted prices for all stocks, except a few railway shares, have been purely nominal.

The Gresley Wood and Swadlincote Colliery Company held their preliminary meeting on Saturday, the object being to see that the requisite amount of capital for authorising the formation of the company had been subscribed. Messrs. Alex. Hankey, T. Cox, T. W. Hodges, T. B. Forman, J. V. Smedley, J. H. Mackenzie, W. B. Church, C. F. Smith, W. Gladwin, and W. Robinson were present, and took part in the proceedings. It having been reported that nearly 40,000l. had been subscribed, the settlement of the articles was proceeded with, and working operations will be at once commenced.

The applications for Letters Patent include—Mr. John Shaw, of the Junction Implement Works, New Wotley, for improvements in machines for cutting or reducing turnips or other roots as food for animals; Mr. E. Vickers, of Sheffield, steel manufacturer, for improvements in the manufacture of steel; Mr. Joseph Walls, of Farington, engineer, for improvements in steam-boilers, and in apparatus connected therewith; Mr. Geo. Lowry, of the Stanley Steel-Works, machine maker, for improvements in and applicable to cotton gins; Messrs. William Whitworth and Joseph Wrigley, of Lowerby Bridge, for improvements in or applicable to the furnaces of steam-boilers.

REPORT FROM MONMOUTH AND SOUTH WALES.

SEPT. 3.—The ironworks of the district are moderately well employed, and makers have a good number of orders on the books. The orders on American account are on the increase, and several cargoes have lately been shipped from both Cardiff and Newport for New York. The resolution of the South Staffordshire ironmasters to advance the price of finished iron 10s. per ton, has had a considerable effect on the trade of this district, and a proportionate rise has been the result in Welsh bars and rails. Bars are now quoted 6l. to 6l. 5s., f.o.b.; and I understand that buyers have, in more than one instance, actually given 6l. 2s. 6d. Taking one view of the matter, this fact shows that the trade is decidedly improving, and there is no doubt but that it is improving, and that substantially so, to a certain extent; but I hear grave doubts expressed as to the continuance of the present favourable prospects. After the South Staffordshire works have been going for a few weeks, then it will be seen whether quotations will be so firmly held, and whether the orders will be sufficient to keep all the works fairly employed.

I perceive that at a meeting held at Wolverhampton, on Wednesday, it was determined to advance the wages of all the men employed at the ironworks, in proportion to the puddlers' advance, and a rise was also agreed to as regards the coal getters. The ironmasters of South Wales have not had this difficulty to contend with as yet, and the relations between masters and men are of the most amicable character. It is quite clear, however, that the puddlers and others employed at the ironworks will follow the example of their brethren in Staffordshire, in so far as to ask for an advance. In taking this step no one can find fault with them; but if, after meeting their employers, and discussing the question, and it is clearly shown that a rise cannot reasonably be granted, they should resort to a strike, then their conduct will be such that deserves to be condemned. Whatever will take place, it is to be hoped that reasonable arguments will have their due weight on both sides, and that the men will not allow their feelings to dominate over their common sense.

There is a large business doing in steam coal, and the demand for house

coal shows a slight improvement. Quotations remain without alteration. The Brecon and Merthyr Tydfil Junction Railway half-yearly meeting was held on Friday, at the offices, Bridge-street, Westminster, Mr. R. K. Penson in the chair. The directors' report stated that the line had been opened from Dowlais to Brecon, and the earnings fully realised the expectations entertained. The old Rumney Railway, from Rumney to Newport, would soon be vested in this company's undertaking. The bill promoted by the company for sanctioning certain deviations had become law, and the connection with the Taff Vale and Vale of Neath was being rapidly proceeded with. An act had also been passed enabling the company to make a junction with the Vale of Neath, and an arrangement for the use of that company's station at Merthyr was confirmed. The arrangements by which this company had running powers over the entire system of the Mid-Wales had been confirmed by Parliament. The acquisition of the old Rumney line was of the greatest importance, as it gave them direct access to the port of Newport, and opened a through route to the Bristol Channel. The passing of the Neath and Brecon Junction Acts would also advance the interest of the company. A dividend at the rate of 5 per cent. per annum was recommended, and unanimously agreed to. The capital account showed that 298,886l. had been received, and 298,822l. expended, leaving a balance of 64l. to the credit of the company.

The Vale of Towy half-yearly meeting was held at Llandovery, on Friday, Mr. D. Jones, M.P., in the chair. The directors' report stated that the affairs of the company were in a satisfactory state, and it was expected that a good dividend would be declared on the ordinary shares at the next half-yearly meeting. The report was unanimously adopted. The directors of the Penarth Harbour, Dock, and Railway Company have just issued their report for the half year ending June 30. It shows a balance of 5472l. on the revenue account, and of 3601l. on capital account. A dividend on the ordinary capital, at the rate of 2½ per cent. per annum, has been declared, after providing for the interest on the preference shares.

I referred last week to the exertions that were being made to devise some means of increasing the trade of Newport, and it is satisfactory to announce that several large capitalists are about to make proposals for the purchase of the Dock Company's property. Unless the latter will be disposed to sell for a reasonable sum, application is to be made in the next session for powers to construct a dock near the mouth of the Ebbw. This project is strongly supported by the Tredegar interest, and all the surrounding property belongs to the Tredegar family. In another six months the through communication with the Aberdare valley will be opened for both passenger and mineral traffic, and there is no doubt but that a large increase of trade will follow, and if proper facilities will be afforded to shippers, Newport will soon regain her lost position. The old Rumney line has at last passed from the hands of its stand-still proprietors, and in a short time it will form part of the Brecon and Merthyr system. An energetic effort is to be made to induce the Rhymney Iron Company to bring their traffic over the line again, and return to Newport, where they formerly shipped all their coal and iron.

The *Swansea and Glamorgan Herald* states that arrangements are in progress to increase the floating accommodation at the rising port of Llanelly. Exery branch of trade has lately so expanded and increased, that there is hardly sufficient accommodation for the shipping that visit the port. Evidently Llanelly is destined to become the centre of a large trade, and this is due in a great measure to the spirited capitalists that have invested their money in the various works of the neighbourhood, and more especially to the efforts of the Llanelly Railway and Dock Company.

Another case of infringement of colliery rules was brought before the Merthyr magistrates, on Monday, the defendant being a collier, named David Evan Davies, employed at the Plymouth Collieries, and he was charged with blasting a hole inside the lamp-station, without permission from either the fireman or overman. The case was proved, and Davies was fined in the mitigated penalty of 20s., or seven days' imprisonment, and it appears that he chose the latter alternative.

The applications for Letters Patent include—Mr. Arthur Agnew, of Welshpool, gun maker, for improvements in breech-loading fire-arms; and Mr. Martyn John Roberts, of Pendarron House, near Crickhowell, for improvements in the arrangement or fitting of axles for railway and other carriages.

FOREIGN MINING AND METALLURGY.

Complaints are made of many difficulties which impede the progress of industrial affairs on the Continent, as matters are at present managed, and as compared with England. If a Belgian merchant attempts an operation in the export trade he meets with a cluster of delays and embarrassments. The different products are scattered—iron and coal in the provinces of Hainaut and Liège, cloth at Verviers, linen and cotton goods in Flanders, while he may not find at Antwerp a ship ready to put to sea. If Belgium possessed a business centre at which could be found capitalists, brokers, shipowners, captains, &c., great advantages would result to Belgian industry. If it objected that Belgium is a country of large extent, might not the object be attained by the establishment of two distinct centres—Antwerp for maritime affairs, and a town in the interior for metallurgical and commercial affairs? It is necessary that this second centre should be suitably selected, and for various reasons it is considered that Brussels presents the most advantages. It is necessary that the town chosen should not be at too great a distance from the different centres of production, and not too far from the port of exportation; it must also have some importance as a city, for the more considerable number of its inhabitants the more easy will transactions become. Various provinces radiate around Brussels, which satisfies all these conditions, and, as almost all Belgian financial affairs are transacted at this centre, it acquires every day more and more importance. It is suggested that to attain greater simplicity and facility in the iron trade, at any rate, a metallurgical Bourse should be created at Brussels, and the idea seems likely to find favour. As regards the course which the Belgian iron markets have taken since reference was last made to them under this head, it may be observed that prices have not varied, but that a rise is every day anticipated in iron. As a general rule, the tone of the market is good, and great activity prevails in the various works. Not content with the powerful means of production which they already possess, several industrialists of the province of Hainaut are devoting attention to the construction of additional blast-furnaces, rolling-works, &c. The Belgian *Moniteur* publishes a treaty of commerce just concluded between Belgium and the Kingdom of Sweden and Norway. By the terms of this treaty, the Customs duties levied on the entrance into Belgium of Swedish pig-iron and steel will be as follows, on and after Oct. 1, 1864:—Rough pig and old iron 10l. Instead of 1s. 3d. per 2 cwt.; beaten, stretched, or rolled iron, 3s. 6d. Instead of 3s. 4d. per 2 cwt.; nails, 5s. per 2 cwt.; as previously; worked pig, 3s. 4d. Instead of 3s. 2 cwt.; worked iron, including rollers, 5s. Instead of 5s. 6d. per 2 cwt.; tin, worked or unwrought, 5s. per 2 cwt.; as before; worked or unwrought steel, 5s. Instead of 7s. 6d. per 2 cwt. We have hinted above that extensions of works are the order of the day in Belgium, and it may be interesting to go a little further into detail on the subject. Rolling works for the production of plates, commenced some months since by M.M. Gustave Dumont and Co., of Châteaufort, are now entirely completed, and it is understood, on good authority that they were put in working in the course of the past week. In the course of the present month (September) a rolling works owned by the Châteaufort Blast-Furnaces and Rolling Works Company is to be put in operation. This establishment will be devoted to the production of rails, plates, and merchants' iron, and will be one of the most considerable works in the district. The rolling-works for plates of M.M. Victor Giliaux and Co., of Marcinelle, are also in full course of construction, and the works of M.M. de Dorlodot Frères display great activity. On the whole, a considerable amount of work is being carried out by the various industrialists engaged in the Belgian iron trade, but it is stated that the profits are not proportionate. The Couillet Company is now constructing as well for the East Belgian Railway as for the State lines, and for Spain a score of locomotives, at extremely low rates. The encouraging anticipations indicated in previous impressions with regard to the Belgian coal trade begin to be realised. A considerable quantity of orders have come to hand, but boats on the canals are still rather scarce, a circumstance which has, of course, checked deliveries.

At St. Dizier iron continues in good demand, and the works are provided with orders, but hitherto prices have not risen. Rolled irons, 9l. 4s.; hammered irons, 11l.; axles, 11l. 10s. per ton. Pig, for refining makes 5l. per ton. The Rouen forges offer irons stated to be made from wood-produced pig at 1l. 16s. for No. 2, and 9l. 12s. for No. 3; while No. 4 stands at 12l. per ton. The irons of Champagne are quoted at 9l. 8s. per ton, delivered at Rouen. A letter from Havre, referring to the great orders of the Government in Staffordshire, the continued suspension of work among the "hands," and the determination of the forge-masters of the district to ask 7l. per ton, states that these terms, added to freight and accessory expense, make up a charge of 8l. per ton at Havre, without payment of dues. A rise took place in warrants last week at Havre. A letter from Rouen expresses astonishment that French irons should remain stationary after the rise which irons have experienced in England. The writer says:—"The prices of iron in England, which have risen during the last few months, continue to be very firm. Thus good marks from Wales, the quality of which corresponds with that of the coke-produced irons of the north of France and the Moselle, are now worth 6l. 5s. per ton, free on board in England. In consequence, the cost price of these irons in the ports of France is 7l. 1s. 6d. per ton, duties excepted. Adding the duties, which are 2l. 16s. per ton, three irons cost 9l. 17s. 6d. per ton on the coast, and 10l. 5s. 6d. per ton at Paris. Coke-produced French irons could be sold at 9l. 12s. per ton at Havre, and 10l. per ton at Paris, without having to fear English competition. It is true that English irons may be received at a cheaper rate by the aid of warrants; but French forge-masters should never be influenced in establishing their prices by importations made by means of warrants; for, whatever they may do, they can never modify the quantity of iron introduced, which will always be the amount of worked iron actually exported from England to France. All reductions made with the view of checking importations are a false manoeuvre, which only has the effect of causing the price of warrants to fall, without in any way changing the quantity imported. regard should only be had to foreign products, with the Customs' duties added; and, therefore, I repeat that French coke-made irons could be carried without danger from English competition to 10l. per ton for Paris, and 9l. 12s. per ton for the ports on the western coast line of the empire." To this it is rejoined, that the notable amelioration which has appeared in England has not been without influence—as the writer supposes—on the French markets; on the contrary, it has stopped the fall in the price of French irons, and brought back some firmness to prices; but, at the same time, it is contended that the French producers have acted wisely in not following, step by step, their competitors across the Channel in the path traced out by them during the past six weeks or two months. The rise in England, although very de-

cided, is not, perhaps, sufficiently justified by circumstances to be durable; it arises especially from an accidental cause, which on its soon disappearing will considerably affect the stability of prices. If it is true that numerous orders of merchants' irons and rails have reached the Welsh works, it is also the fact that the shipment of the Staffordshire forges has greatly contributed to such a state of affairs. The demand of the puddlers in that district having brought nearly 250 furnaces to a standstill. It would be desirable, from a French ironmaster's point of view, that the rise reported in England should be seriously maintained, because the French works would be favourably influenced by it; but it is prudent, nevertheless, for the French iron trade to wait awhile, until the English situation becomes more clearly defined. By this means French firms would if they make any advance be able to do so with sureress and certainty, and would not have to fear a precipitate return to original rates. Warrants, it is further urged, weigh more heavily on the sale of irons than the war of the Rouen letter imagines, and have brought the price of Welsh iron down to 8l. per ton in the ports of the Channel. English classification, larger when compared with French classification, constitutes a difference in price of about 3d. per ton, English iron quoted at 8l. per ton, being reduced in reality to 7l. 13s. 9d., taking into account the difference between French and English classing. Moreover, it must not be forgotten that French ironmasters have even more redoubtable competitors than the English to deal with in their Belgian neighbours. Less favoured than the English, Belgian metallurgy, nevertheless, has reflected a sensible amelioration, and prices have gained firmness. Irons for working can, however, be easily obtained at 6l. 4s. for Hanby, and after adding transport expenses and Customs' duties, Belgian irons are available at Paris at 8l. 8s. per ton, while by means of warrants their price descends to 8l. 8s. per ton. Would it not be possible to quote French coke-made irons at 10l. per ton at Paris? The wood-produced irons of Champagne only make 9l. 12s. to 9l. 16s. per ton at the Villettes depot.

In consequence of the feebleness in the English market for copper, prices have been sustained with difficulty at Paris, although they have not varied. English has made 96l.; Lake Superior, 108l.; and Chilean, 91l. per ton. At Havre, affairs, which have long remained inactive, have been distinguished this week by the sale of 34 tons of Lake Superior, Minnesota mark, at 107l. per ton, showing a sensible fall. The article has, however, been generally held more firmly on the Continent. At Hamburg, the market has been somewhat unsettled, but attention is directed to this metal, and it is expected that on the first impulse prices will display an upward tendency. At Berlin affairs have presented little activity, but holders display full confidence. Some sales to meet the requirements of consumption have been effected at Cologne at previously quoted rates. Since our last report no favourable change has occurred in tin. At Amsterdam and Rotterdam the market is, nevertheless, a little firmer, and 73½ fls. has been offered in vain. The fall which has taken place in English tin has necessarily exerted some influence at Paris, where Banca has been quoted 131l. to 132l.; Detroit, 127l.; and English 117l. to 118l. per ton. Berlin and Cologne have remained without change. At Hamburg, tin is neglected, and prices remain in favour of speculators. Lead enjoys a little more demand, but, notwithstanding this, prices have not changed, and do not display any upward tendency. Paris has been quiet, rough French making 21l. 14s. to 21l. 16s., and Spanish 22l. per ton. Scarcely any business is reported at Marseilles; the last quotations were, lead in saumons first fusion, 19l. 2s.; ditto second fusion, 18l. 14s.; argentiferous, 19l.; shot, 21l. 4s.; and rolled, 21l. 4s. per ton. At Hamburg there has been some demand, but at lower rates; the stocks collected are unimportant. At Cologne and Berlin prices have been sustained; at the former centre various small transactions have taken place. Numerous transactions have been concluded in zinc, and the demand continues good, at slightly rising prices. At Paris rough Silesian has risen from 13l. 4s. to 13l. 16s. per ton, and rolled has been very firm at 34l. At Hamburg the demand has been very good, and the stock collected, which is comparatively small, is much sought after. The Breslau market is also very firm, and good marks find an easy outlet. With reference to the Cravino nickel mines, alluded to last week, it should be stated that the Liège nickel works, which have furnished almost the whole of the nickel used in the manufacture of the new Belgian money, have drawn for the last seven years all their supplies of minerals from the nickel mines of Vialon, in Piedmont.

The Belgian Minister of Finance has just published an official statement, illustrating the movement of Belgian commerce during the first half of the current year. The general position of Belgian metallurgical industry appears from the data collected to indicate prosperity and progress. Thus the exportation of rails is much above the point attained in the corresponding period of 1862; and it may be hoped that this progressive movement will not experience a check, but that the important deliveries still required on foreign account will communicate new elements of activity to the various works. The total exportation amounts to 22,827 tons, showing an augmentation of 590 tons; the increase arises as regards the Low Countries, Spain, Italy, Switzerland, and the Roman States, while there has been a diminution in the movement towards Russia, France, and the Zollverein. A decided augmentation is noticed in the export of bars; Germany contributes to it to the extent of upwards of 250 tons. It has not been the same with regard to pig, the deliveries, which have amounted to 13,638 tons, showing a heavy falling off; this explains, in part, the depressed condition in which many blast-furnaces now find themselves. The total diminution has been about 5000 tons, and it is remarked that the German market seems altogether stagnant. The importations of foreign pig into Belgium have assumed larger proportions; they attained a total of 3,475 tons in the corresponding period of 1861. As regards iron, the falling off is still more marked, the value of the total imported this year having been 135,843l. instead of 187,406l. in 1862, and 37,790l. in 1861.

	1862.	1863.
To the Zollverein	4,979	3,244
Low Countries	57,356	56,108
France	1,337,372	1,474,038
Other destinations	1,815	3,808
Total	1,701,422	1,537,268

To extend our analysis to France. An official statement of the movement of iron and metals during the first half of the current year into and from France shows that the low prices which have prevailed in the French market have led to a reduction in the importations of iron and pig. Thus pig has been reduced this year to the value of 459,487l., against 474,699l. in the corresponding period of 1862, and 196,126l. in the corresponding period of 1861. As regards iron, the falling off is still more marked, the value of the total imported this year having been 135,843l. instead of 187,406l. in 1862, and 37,790l. in 1861.

A period has been put by the French Minister of Agriculture, Commerce, and Public Works to the debate with reference to the new coal tariff of the Northern of France Railway. The Minister has turned a deaf ear to remonstrances addressed to him by the coal owners of the Pas-de-Calais, and has "homologated," or officially approved, the new tariff, which the French firms declare will unduly favour their Belgian and English competitors.

We return to our recapitulation of facts with reference to the mineral wealth of France, with regard to which we have not yet quite exhausted the department of the Ariège. The Icard mine of manganese is situated in the commune of Montels, in the canton of the Bastide-de-Séron, about 10½ miles from Foix, and comprises heaps scattered in beds of calcaire, depending from green sandstones, and directed from the north-west to the south-east. The mineral is an oxydised manganese, generally compact, sometimes crystallised, and mixed in variable proportions with peroxide of iron. Some explorations have been made with respect to this bearing induce hopes of a successful working. At Play and Lamas there is a vein of arsenic, directed from east to west, the extremities of which present an abundance of arsenical paste. To pass now to the department of the Aude, which appears to present various indications of copper. In the commune of Lantoures some researches were prosecuted in 1843, with regard to a vein of copper, the gangue of which, composed of quartz, contains pyrites of copper, carbonates of blue and green copper, and pyrites of iron. The mean thickness of the vein is 4 in. It is desirable that researches should be prosecuted with respect to this bearing, which is at present being explored for a distance of only about 50 feet. The Matsons Mines contain copper-bearing veins of Canals, Pech-Eguite, St. Marie, &c., worked at a comparatively remote period, and abandoned in 1750. The subterranean works here had acquired a very considerable development. As regards mines at Lanet and Buleise, explorations have been made at various periods, the last at about 1798. The Roques-Négros lead and silver mine, situated in the commune of Bains-de-Rennes, was worked formerly; the period and cause of its abandonment is at present unknown. A concession of a lead mine at Villeneuve-les-Chanvons was granted by a royal ordinance, dated Feb. 4, 1864. A mine at Feugerolles has a grey argilliferous metal, the bearing was worked in a remote period, but the works, which were resumed in 1782, were abandoned in 1793, in consequence of the want of revolution. The Las Corbes mine of antimony is a vein of quartz, comprising small deposits of sulphurated antimony. The works were suspended in consequence of a great accumulation of water, and an absence of an effective means of drainage. The Boussoir antimony bearing, situated in the Col de la Boussoire, which was conceded in 1835, appears to be completely exhausted. The Frénois mines of manganese were discovered in 1829; they form heaps, which were successively put in working from 1832 to 1836. We can now move on to another department, that of the Aveyron, comprising a great number of metalliferous bearings, some of which have been the object of serious researches. These mines, the principal groups of which are found in the valleys of the Aveyron and the Tarn, in the neighbourhood of Villefranche and Millau, contain principally galena, rich in silver, copper pyrites, blende, and, in smaller proportions, phosphated lead, blue and green carbonated copper, oxydised copper, native copper, grey copper, bournonite, calamine, &c. The Rouergue mines, in this locality, were worked on a great scale during the existence of the Roman rule in France. The works, interrupted on the fall of the Roman empire, were resumed with great activity from the 10th to the 16th centuries, with the aid of miners secured for this purpose from foreign countries in which the workings of mines flourished; they produced then a great quantity of silver, and led to the creation of mints at Rhodes and Villefranche. The works, interrupted during the religious wars, which lasted without interruption from 1597, and desolated these districts, have not been resumed since the latter year. Of late, however, as we learn from the *Journal des Mines*, the general council of the department, and a company formed for this purpose, have undertaken important researches, which justify the hope that the district will soon again become an important centre of mining industry. The Jurassic calcaire, which forms the plateau of Larzac, and the clays, which are the basis of this formation, contain near St. Paul-des-Fonds, in the canton of St. Affrique, native mercury, which is often brought to the surface of the soil by rain waters. To move on again to the department of the Gard, it may be added that the slatish schist worked in the transition area at Carcy, three miles to the north-west of Harcourt, presents a very singular bearing of silver. The metal presents itself in a state of mixture with copper exactly in the proportions which constitute French money. This native silver is disseminated in the transversal fissures of the schist, and some fragments weigh as much as 10 grammes. Non-argilliferous pyrites of iron are also often associated with the grains of native silver. It is stated that some parts of the bearing have furnished considerable quantities of silver, but there is reason to suppose that it is altogether accidental, since it has not been followed by miners. Before quitting the subject for the present, we may add a few details with respect to the department of the Cantal. The St. Santin-Cantal Mine, in that department, is composed of argilliferous galena, disposed in beds and in heaps. The discovery dates only from 1835, and the works which have been carried on since that period have not confirmed the hopes to which the first exploration made had given rise; suspended in 1839, they were resumed in 1846. A bearing of argilliferous galena, known as the Crouze-le-Haut Mine, near Mauriac, was worked before the revolution. A vein of argilliferous galena was discovered in 1838 at Rouffac, near Montvert. The Aveyron bearing comprises two veins, disposed like those of St. Santin-Cantal. A bearing known as the Combe-de-Monion Mine, situated in the commune of Jon, was worked before the year 1315. The department also possesses some antimony. Thus the Ouche Mine has three irregular veins, known and worked since 1760 at intervals, and on a small

It arises from the fact that the mine, abandoned in 1829, was again worked in 1838, and the Cantal has also numerous workings of sulphurated antimony, which have been worked or explored at various periods. The communes of Lussand, Molède, and Vèze present several indications of veins of mispickel.

SOME CONSIDERATIONS ON THE PROCESSES EMPLOYED IN REFINING IRON AND STEEL.

BY WILLIAM BAKER, ASSOCIATE OF THE ROYAL SCHOOL OF MINES, F.R.S.

This is emphatically the iron age, and the methods of elaborating this pre-eminent metal from its ores, and of preparing it for its manifold purposes, are so time-honoured, and have carried the manufacture to such a pitch of greatness, that it might be thought at first idle, if not presumptuous, to question their correctness, or to propose any alterations. Nevertheless, the successful production of large quantities has not unfrequently been accompanied by a sacrifice of quality. Quantity has been the cry of the day, and now that a demand for better quality is becoming more urgent it will be not unprofitable to review the processes employed for producing a pure iron, and to compare them with similar operations applied to other metals.

It must be premised that the term pure iron, or pure steel, applies to the forms in which the metal is used—cast-iron, steel, and wrought-iron. Carbon only, of the other elements which may exist in the metal, is not considered an impurity, as upon its presence in certain proportions depend the physical characters which determine to which of the above categories it belongs. When copper or lead is smelted from moderately rich ores in a blast-furnace, the operation is exactly similar to the smelting of iron. The carbon of the fuel combines with the oxygen of the metallic oxides, and the metal is eliminated or reduced, whilst such proportions of earthy bases and silicic acid are brought together as will make a fusible slag. At the moment of reduction, should there be certain elements present for which the metal has a strong affinity, they will be carried down with it, and the product will be more or less impure. But when copper is poured into an ingot from the furnace we know that it will be the best copper, if there is absolutely nothing but copper in the ingot. Similarly of lead; there is no combination of lead with any other element that can improve its character as lead for its uses in the arts. Both metals can be extended by rolling or hammering, and according to their crystallisation, will possess a fibre when drawn out. It is otherwise with iron. A strong affinity for carbon, which in different proportions singularly modifies the physical characters of the metal, complicates the after processes of refining. The crude pig-iron then always contains carbon, and not only in various proportions, but also in two distinct conditions. At the first operation in copper smelting, besides the crude metal, a slag is obtained, poor enough to be thrown away. In smelting iron the slag is also rejected as worthless, but the crude product may be—1. White iron, in which the carbon is wholly chemically combined.—2. Grey iron, in which it is chiefly in the form of graphite.—3. Mottled iron, being a mixture of the two former varieties. The impurities which may be present in iron are chiefly sulphur, phosphorus, silicon, and manganese; more rarely traces of copper, lead, arsenic, nickel, zinc, and titanium. It is possible, by a judicious regulation of the charge, and by observing certain precautions, that some of these impurities may be slagged off in the first operation in the blast-furnace. A coal or coke as free as possible from sulphur should, of course, be used—yet, notwithstanding, sulphur is always found in the iron. Phosphorus, when contained in the ore as phosphoric acid, is unfortunately, transferred almost entirely to the iron in the process of smelting. This has been very well proved by Dr. David Price and Mr. Nicholson. (*Vide Chem. Gazette*).

The hot-blast may be said generally to introduce more of these impurities than the cold-blast, which fact in itself illustrates the remark that, at this early stage in the production of the metal, something may be done to improve its quality. There may, however, be no need to take the retrograde step of smelting only with cold-blast. The problem for the metallurgist is to take the crude pig-iron, smelted by the hot-blast, and eliminate its impurities.

The operation of refining crude copper is a roasting or oxidising process, and produces rich slags, which are utilised in the first smelting furnace, along with the ore. The crude metal has carried down with it arsenic, phosphorus, sulphur, lead, and antimony—not to mention some of the most common impurities. Now, as their united amount is small in comparison with the mass of copper, an oxidising process will eliminate them at the cost of a certain amount of copper. The impurities, therefore, are burned off, giving rise to rich oxidised metallic slags. In this case it so happens that, in the order of combustibility, copper burns last of all.

Impure lead is treated in a similar manner. From 8 to 10 tons are melted in a rectangular pan, about 8 in. deep; an oxidising flame plays over the surface of the metal, and the oxidised impurities are separated as rich dross, containing, of course, a great deal of lead; and the metal is purified. Lead, however, is not last in the order of affinity for oxygen at the temperature employed; for copper refuses to oxidise to any extent so long as it is in contact with lead, at least when the proportion is reduced to a certain quantity, which may be roughly stated at 20 ozs. per ton. When much copper is present, it forms combinations with antimony and sulphides of lead less fusible at the temperature employed than lead, and can then be partially separated by skimming off the dross; but copper alone with lead cannot be removed by an oxidising process; still, the chief impurities are oxidised, and give a rich slag, containing a considerable amount of the oxide of the metal to be refined.

If crude pig-iron be submitted to any oxidising process, many impurities would likewise be burned off, with a certain waste of the iron itself. But we are stayed here by the consideration that we should also burn off the carbon, perhaps before the impurities would be oxidised, and the nature of our charge would be essentially altered. Thus, if the metal contain no more than 0.6 per cent. of carbon, it is wrought-iron; with 0.65 per cent. to 2.3 per cent., it is steel; and with 2.3 per cent. to 5.75 per cent., it is cast-iron. These degrees are only valid, however, on the consideration that—1, every malleable iron hardening on quenching, and giving sparks, is steel; and, 2, that separation of graphite on slow cooling and non-malleability in the cold, are characteristic of cast-iron. Supposing, therefore, we desire to obtain a pure cast-iron, theoretically, we should submit it to an oxidising flame, and find some means of constantly supplying the carbon necessary for its constitution. This is, to some extent, accomplished in the finery furnace. Pig-iron is melted down with coke, under a blast from six or eight tuyeres, inclined downwards to the hearth. As the metal melts, silicon is oxidised, and in the form of silicic acid, combines with a little iron, giving rise to a slag containing some of the impurities. A very iron is most free from silicon; and some phosphorus, sulphur, and a little carbon, may be removed in this operation. The product is always white iron, and breaks with a radiating crystalline fracture. The finery furnace in this country is chiefly used as a preliminary step to the operation of puddling. In the puddling-furnace we come to the true roasting or oxidising process, although its object is not to refine the metal, but to convert it into wrought-iron by eliminating its carbon. Finery iron has no direct application in the arts. Price and Nicholson have patented its use for mixture with bar-iron to produce a steel, and with pig-iron for casting ordnance, much stress being laid upon its freedom from silicon.

The puddling process is conducted in a reverberating furnace. The metal, either pig-iron or finery metal, is melted down with the addition of finery slags, or red oxide of iron, which yield oxygen to the metal. As the impurities burn off, and the carbon also is consumed, the metal gradually assumes a pasty consistency, and is brought together in lumps or balls by the workman manipulating with an iron crook. From this point the process cannot be looked upon as a satisfactory refining operation. From the moment the metal loses its fluidity, it is difficult to see how foreign bodies can extricate themselves from the spongy mass, for fluidity is essential to the separation of unlike particles of matter. As it is, the balls are kneaded with great effort, as well as skill, the result being a mass of iron dripping with slag; which, however treated—by the steam-hammer, the squeezer, or the rolls—must always contain minute portions of slag, which tend to destroy the continuity of its texture. The theory of the puddling process is simple: an oxidising flame plays over the charge, the action being assisted by the cinder which covers the melted metal; and the carbon, sulphur, phosphorus, and silicon, become oxidised by the united action of the oxygen of the air and that afforded by the fluid cinder, which may be roughly stated to be generally a tri-basic silicate of iron. With any other metal these slags would be re-worked for the metal they contain; which is, however, done to a very limited extent with iron, as metal made from cinder is reputed bad in quality. We are happily circumstanced in having an abundance of iron ore; but were it not so, necessity would have surely found out a method of producing a fair quality of metal from these slags, which, for richness, may compare with some of the best iron ores. In the puddling process the cinder is a real chemical agent; for it will be

seen, that from the time when the pigs have melted down and become covered with the fluid slag, the oxygen of the air passing through the furnace cannot act directly on the iron, but is transferred by the agency of the oxides of iron in the cinder. The carbon in the iron reduces the higher oxides in the slag; and the reduced oxide, by the boiling movement caused by the evolution of carbonic oxide gas, comes to the surface to take up again oxygen from the air. A much more powerful chemical agent has been employed by Mr. Charles Sanderson, who proposes to use sulphate of iron as an oxidising and purifying agent in the puddling process. The substance is one which readily furnishes nascent oxygen, and only chemists can appreciate the vastly more intense energy of nascent than free oxygen. I am inclined to think that, properly applied, this plan would be very successful. Working upon another metal, I have met with an exactly similar case, which it is worth while to adduce in illustration. Thus, when lead is alloyed with antimony to the extent of about 2 per cent. of the latter, and where a certain amount of sulphur is present, it differs remarkably from pure lead in its behaviour when it is melted and exposed to the air. Its surface is smooth as a mirror, and it may be rubbed or splashed about without undergoing much oxidation; whilst, under similar conditions, pure lead rapidly oxidises and becomes covered with a dross of litharge. Upon presenting any substance that will liberate nascent oxygen at the temperature of melted lead, the sulphur and antimony are immediately attacked and oxidised. It is quite possible that combinations of iron with phosphorus and sulphur, which resist the action of the air, would be readily attacked by nascent oxygen; so that when refining processes are essentially oxidising processes, it is worthy of consideration whether they might not be assisted by chemical agents yielding nascent oxygen at the temperature employed.

The desirability of a mechanical puddler has long been felt by the iron-masters, and the strike now existing in Staffordshire has again brought the question prominently before the public. Two plans may be mentioned as offering the most promising improvements on the present method. One may be shortly described as a cylindrical-furnace bed, which is rotated whilst the flame passes through, causing a sort of churning of the iron in its bath of melted cinder. The other plan, lately described in the *Mining and Smelting Magazine*, is an adaptation of levers to the tool at present used by the puddlers, whereby the same work is done in an easier manner. When machinery takes the place of manual labour, the systems of apparatus between the moving power and the work to be done are seldom alike in aspect. We might look in vain for a resemblance to the stocking-knitters' needles in the elaborate mechanism of the power looms. I am inclined to look upon Bessemer's process as the mechanical puddler of the present day, for in that process we have the power of burning off the carbon and pouring out molten wrought-iron. This is in the same direction as the puddling process, but goes a step beyond. In the Bessemer process oxidation may be carried on until all the carbon is removed, whilst all the time the metal is kept in a fluid state, so that here are all the conditions most favourable to the removal of impurities. If the foreign elements present can be burned (if they have any affinity for oxygen), surely the streams of air passing through the fluid metal, agitating and causing every particle to come into contact with oxygen, will eliminate them along with the carbon. But what does the experience of the steel manufacturers teach us on this point? If the purest steel is required to make articles of fine cutlery, and the Bessemer process produced a pure steel, we might expect to find a few, at least, of the Sheffield manufacturers actually using this process. But, on the contrary, its adoption for the purposes indicated seems very slow.

This practical result accords with what has been shown by chemical investigation. It has been found that of the impurities commonly present in iron, one, especially objectionable—phosphorus—is not removed; that is to say, phosphide of iron melts and dissolves in the molten iron, and appears to be unoxidised in contact with air at the high temperature employed.

We must reserve, however, any final opinions on this matter until more experiments have been made. It must be recollected that the nature of the process limits the time of purification: whilst the combustion of the carbon, and a portion of the iron itself, maintain it in a state of complete fluidity, it is possible that by continuing the action for a longer time, phosphide of iron might be removed. A Bessemer apparatus is not easily fitted up in a chemist's laboratory for experiments, although very many important facts have yet to be learned by its means. Amongst others—whether a neutral blast (that is, one not oxidising in its action) could not be obtained by a mixture of gas and air. By such means the metal might be kept melted, if necessary, a longer time without injury to its quality. It is also extremely probable that a better way of putting in the dose of carbon might be discovered; for after all, however good the Spiegeleisen may be which is employed, it is a crude form of the metal. Again, if carbon in some form could be supplied to keep up the temperature longer than the time necessary to burn off the carbon contained in the pig-iron, advantage might safely be taken of more powerful oxidising agents along with the blast.

As regards the regular cementation process for making steel, we find no special methods of obtaining any purification between the bar-iron and cast-steel. In the cementation cases, it is obvious none but gaseous substances could be eliminated. It is not unlikely that such deleterious elements as phosphorus and sulphur might be got rid of in that form, if the iron were treated with a current of hydrogen. It is quite possible that we may arrive in practice to a cementation in a gaseous current. When blister steel is broken up, assorted according to its temper, and melted, there is yet a slight chance of a refining action. Many have been the nostrums recommended for melting with steel, but only those can be of any use which make a readily fusible slag with the silica and oxide of iron eliminated on melting. The manganese ore (pyrolusite) in common use answers this purpose extremely well. When the steel has once been well melted, no good can be gained by allowing it to remain in the pot; what the manganese has to do, is accomplished, and there is no movement of the steel to bring up from the bottom any particles of impurities to be oxidised.

The question of the constitution of iron and steel is extremely interesting at the present time, as several eminent chemists are working upon it, and have advanced some novel opinions. Let it may be considered that I have taken rather a narrow view of the subject, it must be stated that the ideas of M. Frémy and others have been purposely kept out of the discussion. Cast-iron and steel, and one essential element of their various kinds—carbon, have been considered. M. Frémy imagines that there may exist a variety of steels, in which the carbon may wholly or partly be replaced by silicon, titanium, phosphorus, and other matters; and he has laid some stress upon the presence of nitrogen. Now, if a steel can be produced possessing useful qualities, made, say, with silicon instead of carbon, it is an object of our serious regard, and we would anxiously examine its qualities and properties; but, if experiments have merely shown that these substitutions can be made in the same way that oxide of iron and chromium may be made to replace alumina in common alum, then these results do not afford us the material we require—the well-known metal, carbide, or combination of elements—steel proper.

The present time is exceedingly favourable for a review of the entire subject. Many well-recorded facts have accumulated—the methods of analysis have been much improved. A new series of well-selected samples and a methodical investigation would not fail to show what is essential to good steel. In this sketch, a broader view has been suggested of the methods of refining, by comparing them with principles used in purifying other metals, whilst keeping in view the chemical processes involved in the operation. If the best iron for technical purposes be iron *per se*, or if it be iron, plus a certain amount of carbon, nitrogen, or other element, the problem is a fair, and by no means impossible, one for the modern metallurgist to solve: it is in the one case to eliminate all foreign bodies, and in the other, having obtained pure iron, to add the elements essential to its valuable qualities.

—*Mining and Smelting Magazine*.

DUDLEY AND MIDLAND GEOLOGICAL SOCIETY.—One of the field meetings of this society took place on Saturday, the locality selected for exploration being Hay Head, near Walsall, and the immediate neighbourhood. A very pleasant afternoon was spent, and the collections of both geologists and botanists were enriched by the joint. The members mustered at the railway station shortly after two o'clock. Among those present were Mr. H. Beckett, F.G.S., Dr. Fraser, Mr. Griffin (Wolverhampton), Mr. Brown and party, Mr. T. Southern (Widnesbury), Rev. J. H. Thompson (Cradley), Mr. J. U. Fellows, Mr. W. Cotterill (Walsall), Mr. G. Perry, Mr. E. Martin (Stourbridge), and Mr. J. Jones (Dudley). Passing through the town, and taking the Old Sutton Road, the party proceeded first to the canal in the Wenlock shale, Hay Head, where, many years ago, some of the most beautiful fossils of the Wenlock formation were obtained. On the banks of the canal a halt was made, and many of the characteristic fossils were found, including some varieties of corals. They next proceeded to Hay Head, where the Woolhope or Bar limestone crops out at a gentle angle from beneath the Wenlock shale, which occupies the valley between this place and Walsall. The botanists had here an opportunity of gathering some rather rare plants, including *Chlora perfoliata*, *Carduus crispiflorus*, *Erythraea centaurea*, *Rosa arvensis*, *Polystichum aculeatum*, *Anagallis arvensis* (the Canadian weed, which has within the last few

years become so unpleasantly abundant in our rivers and canals). The next point of interest was the outcrop of the Llandovery rocks, near the Three Crowns Inn, where, in a small ravine, the fawn-coloured sandstone of these rocks may be observed on one side of a little streamlet; while on the other the red Permian beds come in, showing that here is the eastern boundary fault of this district, and the true coal measures overlie the Silurians in the immediate neighbourhood. This is the only out-crop of the May Hill sandstone in connection with Woolhope limestone in this district, and, consequently, the ravine was examined with considerable interest. After this the Hay Head limestone was examined a little further on the south-east, where some additional fossils were obtained, and the excursionists then wended their way back to town, well satisfied with the results of the day's explorations. —*Wolverhampton Chronicle*.

ORIGINATOR OF THE MODERN RAILWAY SYSTEM—No. V.

It may, perhaps, not be irrelevant here to mention that the late Mr. W. James possessed very extensive coal mines in Staffordshire, Warwickshire, and Derbyshire, as well as ironworks and limeworks, and was deeply interested in the Stratford-upon-Avon Canal and River Avon navigation, as far as Tewkesbury, and, having been subjected to very overbearing conduct by the Birmingham Canal Company, he obtained, about the year 1810, a long lease of an extensive tract of ground at Newhall Hill, situate very centrally in the town of Birmingham, the greater portion of which he removed, at a very great expense, and upon its site formed a series of wharves, which he connected, by means of a short branch of canal, with the Birmingham and Fazeley Canal; his real and ultimate object, however, being to run a main central railroad through a short tunnel under the remainder of the hill, and thence, through the very heart of the Staffordshire coal field to Wolverhampton, connecting it, in its progress, by means of a perfect network of short railways, with the adjacent towns of Dudley, Stourbridge, Wednesbury, Bilston, Walsall, &c., and all the principal collieries and ironworks of that district, with the view of breaking up the very powerful monopoly of the Birmingham Canal Company, with which he had been long at variance—a reduced drawing of which lines of railway is now in possession of his son W. H. James, who himself made the copy some years afterwards. And in furtherance also of which object, and for opening new markets for the produce of his mines, and improving his canal and river property he, in the next place, about the year 1813, projected what he designated the Central Union Railway, or Tramroad, to commence at Stratford-upon-Avon, passing through Moreton-in-Marsh, Charlbury, Oxford, and Usbridge, to Paddington, with branches through Shipstone, Warwick, and Coventry, to his mines at Wyken, in Warwickshire, and Swanlinch, in Derbyshire, and from Stow, to meet the Gloucester Railway at Cheltenham, and from Shipton on the Wilts and Berks Canal, near Longcot, with the view of diverting the transit of heavy goods and minerals from their usual route, along the Birmingham, Warwick, and Oxford Canals, into and along the Stratford Canal, river, and railways before mentioned, of which, in 1820, he published engravings, showing their communication with the various coal fields, canals, and principal towns, and the metropolis. About this period Mr. James also projected a line of railway from the Duke of Marlborough's estate at Bienenheim, through Cassington, to join the Central Junction Railway, near Oxford, and in connection therewith suggested the employment of wrought-iron skeleton-edged rails, of his invention, which he proposed to form by rolling, or welding—a sketch of which rails he has given in his memorandum-book in connection with other improvements of that nobleman's estate. During the preceding period, while so engaged, Mr. James sent a letter to Mr. William Whitmore, C.E., dated Dec. 2, 1814, of which there is a copy, containing the following instructions:—"I do think we must put our railroad immediately down, for L. Ed— cannot and dare not interrupt us; let Kinshaw lay it down immediately, and interrupt us if he dares, but I will be on the line next week." &c. It does not appear, however, to what line of railroad these instructions applied. Soon after this period Mr. James commenced running a series of light iron canal boats, for the conveyance of coal from his collieries in Staffordshire to Stratford-upon-Avon in stages upon the mail coach principle, which he continued for a considerable time, but in consequence of the frequent stoppages that took place on the canal he repented, and, finding that this system could not be carried out with a advantage, he began to turn his attention to the working of canal boats by steam-power, and in a letter which is amongst these documents, dated April 20, 1818, to his eldest son, W. H. James (who was then building a new rotary-engine of his invention, for propelling carriages upon turnpike-roads), urging him to get on with his engine that he (Mr. James) might apply it for driving one boat and drawing another, &c. Finding, however, that neither of these methods were likely to produce the velocity of transit which he never doubted to be attainable on railways, he then directed all his attention to the application of locomotive-engine power thereon, and in 1819 and 1820 surveyed and made sections of the line of railway between Stratford-upon-Avon, and Moreton-in-Marsh, suitable for the employment of locomotive-engines, which he completed in 1821, and in January, 1822, delivered to the committee appointed to determine the question a voluminous and very masterly drawn up report, not only embracing all the necessary calculations and estimates, but also a series of remarks and observations, amounting almost to a treatise, upon the engine railroad system, of the great advantages of which he appears to have been so fully impressed that he concludes his remarks as follows:—"I cannot too emphatically urge the committee to keep their determination to themselves until the preliminary negotiations are far advanced, for there are persons so deeply prejudiced as to be hostile to the measure, although it carries with it the most beneficial consequences to all ranks of society, and tends to bless the land through which it passes." It should, however, be mentioned that at the very same time Mr. James was engaged on these surveys he had another staff of surveyors at work in surveying, levelling, and planning his more important line of railroad between Liverpool and Manchester, upon which line he had fully made up his mind to introduce the locomotive-engine system of transit for goods and passengers; and having during its progress viewed the engine of Blenkinsop, he at once decided upon paying a flying visit to Newcastle, to see the engines of Blackett and Stephenson, about which period he first became known to the last-named individual, with whom and his partner, Mr. Losh, he very soon entered into an agreement for the use of their engine, of which the following is a copy:—"Know all men by these presents, that we William Losh, of the town and county of Newcastle-upon-Tyne, ironfounder, and George Stephenson, of Killingworth, in the county of Northumberland, engineer, in consideration of 5l. of lawful money to us paid at or before the sealing and delivery of these presents, and in consideration of Mr. William James, of West Bromwich, in the county of Stafford, miner and engineer, giving his recommendation and best assistance, for the using and employing the locomotive engines, for which we, William Losh and George Stephenson, have obtained two letters patent, on such terms as we shall by writing direct and appoint. We the said Losh and Stephenson, have granted and assigned, and by these presents do grant and assign unto the said William James, his heirs, administrators, and assigns, one fourth part or share of our rights and patents in the exclusive use of the locomotive engine for working on railroads, secured to us by certain acts of Letters Patent of his late Majesty, and of the profits arising from the granting the use thereof to any other party or persons whomsoever—such fourth part or share of the use, right, interest, and profits to be confined to engines made, used, and sold in that part of England and Wales lying south of a line drawn from the town of Liverpool to the town of Hull; to have and to hold such fourth part or share of the said patent right and profits from the date thereof, unto the said William James, during the term of the said Letters Patent.

Given under our hands and seals this first day of September, 1821.

WILLIAM LOSH. GEORGE STEPHENSON.

And in consideration of such grant of one fourth share in their Patent, William James agrees to allow the said William Losh and George Stephenson to adopt any improvements and the introduction of tubes to their boilers, as contained in the Letters Patent of William Henry James, son of the said William James, as granted to him in the reign of his present Majesty.

Signed, WILLIAM HENRY JAMES, WILLIAM JAMES.

Dated September 1, 1821. W. H. JAMES, C.E.,

Elders son of, and assistant to, the late William James in his original surveys of the Liverpool and Manchester and Bolton Railway, the first established for engine passenger traffic.

FIRING OF A COAL PIT.—We have to record a sad calamity, the firing of the Wellington Colliery, by which 700 hands have been thrown out of employment until work can be found for them elsewhere, or the water which has been let into the pit can be pumped out and operations resumed. It seems that the pit was first discovered to be on fire a week ago, and the alarm having been communicated to Mr. Bourne, the Earl of Lonsdale's representative at the colliery office, that gentleman forthwith repaired to the spot, and took prompt measures for staying the progress of the disaster. This was a work of extreme difficulty and danger; but, through Mr. Bourne's constant personal supervision and direction, aided by the assistance of his deputy, Mr. Mulcaire, and of all the officers and men employed at the works, it was thought that on Thursday the fire had been subdued. In the afternoon of that day, however, a quantity of gas, unfortunately, escaped, and, igniting some timber, gave a fresh impetus to the combustion of the coal, which afterwards so far increased as to render it necessary to drown the pit. On Saturday it was found that all ordinary means were insufficient to get the fire under. The whole of the horses down the pit were therefore taken out, preparatory to closing the shaft, which we understand was resolved upon, and we believe a portion of the lower workings in which the fire is situated will be walled off from the dip workings, and then inundated with water by pumping it in, and also probably by a siphon from the sea. These are extreme measures to take, but we trust they will prove effective, and shortly enable the noble proprietor to again get this fine coal mine into working order. The fire is said to have originated in a flue which leads from the stationary engine to the pit bottom, and in which the soot had accumulated. How long the soot in this flue may have accumulated is not known, but eventually the fire seized upon the coal, and, since Monday last, continued to spread, despite the efforts of Mr. Bourne and his staff, aided by the great experience of the eminent colliery engineer, Mr. Foster, of Newcastle, who was telegraphed for on the matter assuming so serious a shape. We regret to say that up to the time of our going to press this disastrous fire continued to spread, but it is hoped, from the measures adopted that its ravages will be confined to a limited area. A siphon pipe is now laid down from the pit to the sea at low-water mark, while water is drawn from the Seafield pond, from near James's pit, and also pumped from the sea near the bath houses so far increased as to render it necessary to drown the pit. On Saturday it was found that all ordinary means were insufficient to get the fire under. 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WEST WHEEL FRIENDSHIP COPPER MINING COMPANY (LIMITED).

IN THE PARISHES OF BRENTON AND TAVISTOCK, IN THE COUNTY OF DEVON.

Incorporated by the Companies Act, 1857, by which the liability of the shareholders is limited to the amount of their shares.
Capital £30,000, in 30,000 shares of £1 each. 5s. per share on application, 15s. per share on allotment.

DIRECTORS.
GEORGE BASHFORD, Esq. (Messrs. G. Bashford and Co.), East India Chambers, Leadenhall-street, E.C.
CHARLES FRYE, Esq., 5, New-square, Lincoln's Inn, W.C.
FRANCIS FORD, Esq., 9, Laurence Pountney-hill, E.C.
JOHN LEONARD, Esq., Southampton, and St. Lawrence, Isle of Wight.
GEORGE SHARER, Esq., 27, Leadenhall-street, E.C.

AUDITORS.
Frederick Maynard, Esq., Broad-street, E.C.
Samuel Lovelock, Esq., 7, Tokenhouse-yard, E.C.
SECRETARY.
J. J. Peddell, Esq., 82, Chesapeake, E.C.
BANKERS.
Metropolitan and Provincial Bank, 25, Cornhill, E.C.
CONSULTING ENGINEERS.
Joseph H. Hitchens, Esq., Consulting Mining Engineer to the Devon Great Consols Mining Company.
SECRETARY.—Mr. William S. Martin.
TEMPORARY OFFICES.—4, GREAT WINCHESTER STREET.

PROSPECTUS.

This valuable mine is situated in the parishes of Brenton and Tavistock, in the county of Devon, and almost adjoining the celebrated Wheal Friendship Mine, which has paid upwards of £560,000 in dividends.

It will be seen from the reports that the lodes in this mine are not only of unusual width, but in their geological construction exactly similar to those of the great mine just mentioned.

Notwithstanding the encouraging prospects which the extent of ground laid open had offered, the working of the mine was abandoned five or six years ago, consequent upon the funds that sprung into existence among the then adventurers, after an expenditure of upwards of £10,000.

In commencing operations upon new ground, it frequently occurs that a large sum is laid out, and discovered after a time to have been a fruitless expenditure; but, in the present instance, the outlay has proceeded to the extent of showing the valuable nature of the mine, the certainty of success, and of the shareholders soon being in possession of an excellent dividend-paying property.

The principal feature of the set, as at present explored, consists of three lodes, referred to in the reports as the main north lode, the middle lode, and the great south gossan lode; and from their quick underlie, the junction of these two latter with the main lode may be expected at not much greater depth than the present engine-shaft, in the sinking of which a large sum of money was expended by the former adventurers.

It is proposed to erect immediately a steam-engine of 40 or 50-hp. cylinder, to continue sinking the engine-shaft to the junction of the lodes, and by cross-cuts at the present depth of the engine-shaft to intersect the three lodes, which operations have been always considered indispensable for the development of the resources of the mine.

The properties and general characteristics of the lodes at the 33 and 43 improved to such an extent, that when the junction of the three lodes just mentioned is reached, which can be done in about six months from the time of the erection of the engine, very productive returns may be confidently expected, although it is fully believed that at the 33 (the present depth of the engine-shaft) the lodes will prove highly remunerative.

The plant comprises on surface a 40-hp. water-wheel, available for stamping and dressing the ore, pumps, water-courses, carpenter's shop, smithy, office, &c. &c.

The undertaking is divided into 30,000 shares of £1 each, representing a capital of £30,000, and arrangements having been made for the purchase of the lease, plant, &c., on the property, for £6000, £5000 in the shares of the company, and £1000 in cash (thus showing incontestably the high opinion entertained by the vendors of the mine), a clear working capital of £24,000 is thus left for all future operations, a sum deemed ample, if not in excess, for all wants and work that can be required to fully develop the valuable contents of the mine.

The mine is held on a lease for 21 years, at a royalty of 1-15th.

A careful perusal of Mr. Joseph Hitchens's report is earnestly invited, as also that of Capt. James Richards, in which are found embodied all the advantages possessed by this really most valuable property.

Prospectuses containing reports and maps, and forms of application for shares can be obtained from the solicitor or secretary at the company's offices.

FORM OF APPLICATION FOR SHARES.

(To be forwarded, with 5s. per share, to the company's bankers or to the secretary.)
To the Directors of the West Wheel Friendship Copper Mining Company, Limited,
GENTLEMEN.—Having paid into the hands of the sum of £5, being 5s. per share on application, I hereby agree to become a member of the company, and to accept the same shares, or any less number which may be allotted to me; to pay the remaining 10s. per share on the shares allotted, and to sign the Articles of Association when required.

Name,
Profession or business,
Address,
Dated the day of 1863.

THE NEW CONCORD SILVER, LEAD, AND COPPER MINING COMPANY (LIMITED).

Incorporated under the Companies Act, 1862.
Capital £30,000, in 10,000 shares of £3 each. Deposit on application 10s. per share, and payment on allotment £1.
BANKERS.—The City Bank, Threadneedle-street.
BROKER.—Alfred Bingham, Esq., 1, Copthall Chambers, E.C.
SECRETARY.—Mr. H. Brook.
OFFICES.—11, TOKENHOUSE YARD, LOTHBURY, E.C.

ABRIDGED PROSPECTUS.

This company proposes to purchase the freehold estate of Wonwood, near Tavistock, Devon, consisting of 100 acres, and including the valuable lead and copper mine known as Wheal Concord.

This mine was worked many years ago, and £24,000 worth of lead ore obtained from shallow levels, when it was stopped in consequence of litigation between the company and the freeholder. It is now being worked on a small scale very successfully.

A provisional contract has been made for the purchase of the entire freehold, with all its mineral, and the plant of the mine, for £16,000, of which the vendors receive £7000 in paid-up shares.

Samples of the ore can be seen at the office, 11, Tokenhouse-yard, and prospectuses, and forms of application for shares, with the surveyors' reports, may be obtained also of the bankers and broker of the company.

Should no allotment of shares be made, all deposits will be returned.

THE WEST POLBREEN TIN MINING COMPANY (LIMITED).

ST. AGNES, CORNWALL.
Incorporated under the Companies Act, 1862.
Capital £6000, in shares of £1 each.
Deposit on application 5s., and 5s. on allotment. No further calls to be made for twelve months.

DIRECTORS.
EDWARD W. BURLS, Esq., the Villas, Erith.
H. L. PHILLIPS, Esq., 8, London-street, Fenchurch-street, London.
DAVID GRIMMETT, Esq., 2, King's-row, Walworth, London.
JOHN WARD, Esq. (firm of Ward Brothers), 65, Bartholomew-close, London.
W. C. PAUL, Esq., 79, Queen's-road, Baywater, London.

BANKERS.—Roberts, Lubbock, and Co., 15, Lombard-street, London; Williams and Co., Miners' Bank, Truro, Cornwall.
SOLICITORS.—Messrs. Waller and Kerly, 2, Duke-street, Adelphi, London.
AUDITOR.—Charles Warwick, Esq., 25, Bucklersbury, London, E.C.
SECRETARY.—Mr. T. Cartbew.
OFFICES.—12, BUCKLESBURY, CITY.

This company is established to purchase and work a very valuable tin mine at St. Agnes, Cornwall, known as West Polbreen.

Its geological position is first rate, being surrounded by the most productive mines of this celebrated district, and possessing 13 champion lodes of great richness and value. The mine will be worked very cheaply, sales of tin will be soon made, and no call will be required for 12 months.

The last sale of tin paid its cost, and it is fully expected that in a short period the mine will be giving very handsome profits.

The vendors of the property are so confident in the success of the mine, that they have sold their entire interest in it for 2200 paid-up shares. This is a very satisfactory arrangement, as they have expended a deal of capital on the property, and made it nearly self-supporting.

A most valuable cross-course intersects all the lodes. The miners are now driving the level on May's lode towards it, and opening up rich and profitable tin ground, which is improving every week (see weekly report from the mine). In a short time the celebrated Dorcas lode will be cut, and it is believed will at once give immense returns.

The directors submit this property to the public with the greatest confidence. A considerable number of shares have been already subscribed, and immediate application is requested for the remainder.

Magnificent specimens of the ore may be seen at the office of the company, where prospectuses, plans, reports, and every information may be readily obtained.

THE WEST POLBREEN TIN MINING COMPANY (LIMITED).

Notice is hereby given, that the SHARE LIST of this company WILL CLOSE on FRIDAY, the 11th September. By order of the Board, THOMAS CARTHEW, &c.

JOHN GLEDHILL AND CO. MINE AGENTS AND SHAREBROKERS, MINING OFFICES, CORN EXCHANGE, LEEDS.

JAMES H. COCK, MINE SHAREBROKER AND DEALER, REDRUTH, CORNWALL.
J. H. Cock, having had 10 years' experience in the mining market, and being thoroughly acquainted with mines and their management, is in a position to advise or do business on the most advantageous terms. Cash or time bargains promptly attended to.

MR. EDWARD BREWIS, STOCK AND SHAREBROKER.

49, GREY STREET, NEWCASTLE-ON-TYNE, TRANSACTS ALL BUSINESS IN LOCAL RAILWAYS, GAS, WATER, AND MINING SHARES, at the ordinary rate of commission. Bankers: Branch Bank of England.

ROYAL SCHOOL OF MINES.

Sir RODERICK IMPEY MURCHISON, K.C.B., F.R.S., &c.
During the session 1863-64, which will commence on the 6th of October, the following COURSES OF LECTURES AND PRACTICAL DEMONSTRATIONS will be given:—
1.—CHEMISTRY By A. W. HOFMANN, LL.D., F.R.S., &c.
2.—METALLURGY By JOHN PERCY, M.A., F.R.S.
3.—NATURAL HISTORY By T. H. HUXLEY, F.R.S.
4.—MINERALOGY By WASHINGTON W. SMITH, M.A., F.R.S.
5.—MINING By ROBERT WILLIS, M.A., F.R.S.
6.—GEOLOGY By T. TIDDALE, F.R.S.
7.—APPLIED MECHANICS By J. HAYTHORNE EDGAR, M.A.
8.—PHYSICS By J. TIDDALE, F.R.S.
Instruction in Mechanical Drawing, by Rev. J. HAYTHORNE EDGAR, M.A.
The fee for students desirous of becoming associates is £20 in one sum, on entrance or two annual payments of £10, exclusive of the laboratories.
Pupils are received in the Royal College of Chemistry (the Laboratory of the School), under the direction of Dr. Hofmann, and in the Metallurgical Laboratory, under the direction of Dr. Percy.
Tickets to separate course of lectures are issued at £3 and £4 each.
Officers in the Queen's service, Her Majesty's consuls, acting mining agents and managers, may obtain tickets at reduced prices.
Certificated schoolmasters, pupil teachers, and others engaged in education, are also admitted to the lectures at reduced fees.
His Royal Highness the Prince of Wales has granted two scholarships, and several others have also been established.
For a prospectus and information, apply at the Museum of Practical Geology, Jermyn-street, London, S.W.

In the Court of the Vice-Warden of the Stannaries, Stannaries of Cornwall.

IN RE WHEEL LOVELL MINE.
To BE SOLD, pursuant to an Order made in a Cause Carno v. Burke, dated the 4th day of August last, BY PUBLIC AUCTION, at the Registrar's Office, Truro, on Wednesday, the 16th day of September instant, at Twelve o'clock at noon precisely,
2 (340ths) SHARES of the defendant,
Of and in the said MINE.
HODGE, HOCKIN, AND MARRACK, Solicitors, Truro
(Agents for S. T. G. Downing, Plaintiff's Solicitor, Redruth).
Dated Registrar's Office, Truro, September 2, 1863.

WANTED, in a FIRST-CLASS MINE in SOUTH AMERICA, a SECOND MINE CAPTAIN, who thoroughly understands timber and pitwork. Salary, £200 per annum, with allowances.—Apply by letter, with copies only of testimonials, to "H. O." MINING JOURNAL office, 26, Fleet-street, London, E.C.

WANTED, by a young man aged 30 years, who has had 14 years' experience at a large colliery in Lancashire, a SITUATION as GENERAL COLLIERY MANAGER. References to character can be had on application.—Address, "H. P." MINING JOURNAL office, 26, Fleet-street, London, E.C.

£1000 WANTED ON MORTGAGE of a VALUABLE PATENT, at a liberal rate of interest. The three owners of the patent will personally covenant for the repayment. No agent need apply.—Address, Child and Son, solicitors, 62, Cannon-street, London, E.C.

TENDERS WANTED for about SIX HUNDRED TONS of METAL TUBING. Not less than one-fifth part of hematite to be mixed with the metal. Sealed tenders to be addressed to the RYNOBE COAL COMPANY, Sunderland, on or before the 16th proximo. The company do not bind themselves to accept the lowest or any tender.—Sunderland, August 21, 1863.

FOR SALE, a splendid nearly NEW 30 in. cylinder STEAM PUMPING ENGINE, with 10 ton BOILER, very bright, and in perfect order. Apply to Mr. THOMAS HOLLOW, Lelant, Hayle.

QUARRY INSPECTION.—A PRACTICAL QUARRYMEN, who is well acquainted with all the quarries in North Wales, as well as several in Devonshire and Cornwall, OFFERS HIS SERVICES to INSPECT SLATE QUARRIES, and to furnish truthful reports thereon. Highly respectable references given if required.—Address, "Quarryman," MINING JOURNAL office, 26, Fleet-street, London, E.C.

SLATE QUARRY.—TO CAPITALISTS, SOLICITORS, BROKERS, AND OTHERS.—The ADVERTISER is DESIROUS of DISPOSING OF, on advantageous terms, a VALUABLE SLATE QUARRY in CARNARVONSHIRE. Or would be happy to treat with a respectable party to form a limited liability company to work the same.—Address, WILLIAM MORRIS, Esq., MINING JOURNAL office, 26, Fleet-street, London, E.C.

SLATE QUARRY.—The LESSEES of very VALUABLE SLATE ROCK PROPERTY in MERIONETHSHIRE, within three miles of a shipping port, are PREPARED to DISPOSE of the WHOLE or PART of THEIR INTEREST in the same. There are TWO BEDS of SLATE ROCK, one of a beautiful GREEN and the other a BLUE colour. There is every facility for opening extensive quarries. Terms very easy.—Address, Mr. MORRIS ROBERTS, Giamorra Slate Works, Carnarvon.

TO CAPITALISTS.—SLATE QUARRY, PRICE £2000.—£2500 will enable it in three months to produce at a profit of £2000 per annum. Contracts arranged to put it in order to produce the quantity named, and to work at cent. per cent. gross profit; and orders are obtained for above a year's production.—Address, "H. P." 3, Old Bond-street, London, W.

TO CAPITALISTS AND OTHERS.—FOR SALE, the LEASE of a VALUABLE SLATE QUARRY in CARNARVONSHIRE, in full working order, capable of producing an immediate return of slates. One mile from a tramroad, by which cost of carriage can be reduced to 3s. 6d. per ton.—Apply to Messrs. TAYLOR and MASON, 15, Fumival's Inn, London.

TO CAPITALISTS.—A gentleman having discovered upon his estate FINE LODES, and of very encouraging prospects for LEAD and COPPER ORE, has the same TO LET, on moderate royalty. A small quantity of lead has been found in one lode. Shares would be taken at once should the work discovered be formed into a company.—Address, "L. M. N." Post-office, Ferry-side, Carmarthen, South Wales. P.S.—Also TO BE LET, a VALUABLE LEAD MINE in SOUTH WALES.

TO MINE AGENTS.—A BLACK LEAD of very SUPERIOR QUALITY, for MINING and OTHER MACHINERY, perfectly free from grit, at 16s. per cwt., delivered at any railway station. A trial sample forwarded free on application.—Apply to JOHN JAMES and SON, Dragon Wharf, Truro.

TO PROMOTERS OF PUBLIC COMPANIES, SOLICITORS, AND OTHERS.—WANTED, the ASSISTANCE of a SUITABLE PARTY to FORM a LIMITED LIABILITY COMPANY to WORK a VALUABLE COPPER MINE in MERIONETHSHIRE, NORTH WALES. Or the party would be sold on reasonable terms.—Apply to Mr. PARTCHARD, MINING JOURNAL office, 26, Fleet-street, London, E.C.

METAL TUBES AND CYLINDERS.—The ADVERTISER has COMPLETED an IMPROVEMENT in MACHINERY for MANUFACTURE of SAME, which is protected at home and abroad. He is now DESIROUS of JOINING with a CAPITALIST to FURTHER the UNDERTAKING, which promises to be a valuable one. A machine is ready for view.—Apply to JNO. KENDRICK, 20, Easy-street, Birmingham.

MINE INSPECTING.—CAPT. JOSEPH WEBB, of REDRUTH, continues to INSPECT and REPORT on MINES and MINERAL PROPERTY. His long experience enables him to form correct opinions of their prospects and intrinsic values. Samples taken from all the tutwork operations, and the real value ascertained.—August 14, 1863.

WICKLOW COPPER MINE COMPANY.—At the FINAL ORDINARY GENERAL MEETING of the proprietors of the above company, held on Monday, 31st August, 1863, at their office, 43, Dame-street, Dublin, EDWARD WRIGHT, Esq., in the chair.

It was moved by the CHAIRMAN, seconded by NATHANIEL HONE, Esq., and resolved:—That the directors' report and statement of accounts up to 31st August, now read, be received and adopted.

Moved by the CHAIRMAN, seconded by JOSEPH SCOTT MOORE, Esq., and resolved:—That a final dividend of 26s. per share (free of income tax) be now declared payable, on and after the 31st of December next, at 43, Dame-street, Dublin, and in London at Messrs. Puget, Bainbridge, and Co., 3, St. Paul's Church-yard.

EDWARD WRIGHT, Chairman.
HENRY A. CRUISE, Sec.
Mr. Wright having vacated the chair, and Octavius O'Brien, Esq., having been called thereunto,
It was moved by NATHANIEL HONE, Esq., seconded by JOSEPH SCOTT MOORE, Esq., and resolved:—That a special vote of thanks be recorded the directors for their great attention to and successful management of the affairs of the company.

OCTAVIUS O'BRIEN, Chairman.

A DELAIDE LAND AND GOLD COMPANY.—Notice is hereby given, that the liquidators will be PREPARED to PAY a THIRD INSTALLMENT of THREE SHILLINGS and SIXPENCE PER SHARE, on MONDAY, the 28th day of September, and two following days, between the hours of Eleven and Two o'clock, as under.
HANCOCK, SHARP, AND HALL, Solicitors to the Liquidators.
20, Tokenhouse-yard, London, August 31, 1863.

FORTUNE COPPER MINING COMPANY OF WESTERN AUSTRALIA (LIMITED).—Notice is hereby given, that the FIRST ANNUAL GENERAL MEETING of the Fortune Copper Mining Company of Western Australia (Limited) will be HELD at the office of the company, 9, Gracechurch-street, London, E.C., on WEDNESDAY, the 16th inst., at Two o'clock precisely.

R. NICHOLAS, Sec.

TO INVESTORS.—CONSULT Mr. GRIFFITH, 27, LEADENHALL STREET, LONDON, E.C., who ADVISES as to the RESPECTABLE VALUE, and PROBABLE PROSPECT of SUCCESS of ANY SCHEME, PUBLIC COMPANY, &c., whether already established or in course of formation.

THOS. L. COTTINGHAM, MINING ENGINEER, MINERAL AND LAND SURVEYOR, AND GENERAL AGENT, LITTLE NESTON, CHESHIRE, AND MOLD, FLINTSHIRE.

FOR SALE BY AUCTION. THE RIVER TAMAR COPPER MINE, CALSTOCK, CORNWALL.

MR. T. P. THOMAS has been favoured with instructions from the Liquidators to SELL BY PUBLIC AUCTION, at Garraway's Coffee-house, Change-alley, Cornhill, London, on Thursday, the 10th September next, at One o'clock, in One Lot, and subject to the conditions which will be then and there produced and read, all that VALUABLE PROPERTY known as THE RIVER TAMAR COPPER MINE, situate in the parish of Calstock, in the county of Cornwall, together with the BUILDINGS, MACHINERY, STORES, and MATERIALS forming the whole of the PLANT and PROPERTY of the RIVER TAMAR MINE COMPANY (LIMITED), in, upon, and belonging to the mine, comprising—
A 40-in. cylinder PUMPING ENGINE, with 10 ton BOILER, complete.
35 fms. 11 in. pumps.
1 11 in. H. piece and top door piece.
1 11 in. 6 ft. windbore.
1 10 in. plunger pole, plunger case, &c.
17 fms. 8 in. pumps.
2 7 in. working barrels.
2 7 in. windbores.
2 7 in. door pieces.
11 fms. 6 in. pumps, 1 5 1/2 in. windbore, 1 8 in. windbore.
1 6 in. door piece, 1 5 1/2 in. working.
36 fms. 10 in. and 11 in. rods, rod plates, bolts, staples and glands, &c.
60 fms. 1 1/2 in. and 1 3/4 in. bucket rods, &c.
40 fms. casing.
Double power winch, double and treble blocks, scales and weights, lifting screw, smith's bellows, smith's tools, anvil, vice, screw stocks, taps and plates, miners' tools, blaster steel, blasting powder, chain, launders, tackles, water barrels, chests, &c., scrap iron and old rope, miners' dial, and counting-house furniture.
The sett is extensive, being about a mile and three-quarters in length on the course of the lodes, and about three-quarters of a mile wide. It is held under lease from the Duchy of Cornwall for 21 years, from August, 1852, at a royalty of 1-16th, subject to a minimum rent of £40 per annum, but which has been suspended during pleasure, and will, no doubt, be given up altogether.
T. P. Thomas can recommend this property as a first-rate speculation. It appears to be the opinion of practical men, well versed with the peculiarities of the locality, that the prospects of the mine are very great, a good lode having been intersected in the adit level 3 to 4 ft. wide, producing very rich copper ore, and embedded in a highly mineralised kilias at the foot of a granite hill; besides this lode there are three other known lodes between the present adit end and the southern boundary, all of a promising character, and likely to be productive in depth. All known conditions of success are present at this mine. It is surrounded by dividend-paying mines, joining on its eastern boundary the Devon Great Consols at the River Tamar, which has already sold ore upwards of million in value, and at the south-east it nearly joins the Bedford United, which has also been a paying mine for years. Its southern boundary joins the Old Gunn Lake sett, which divided a quarter of a million amongst the adventurers, and in the western part of the sett it touches the Hingston Down Mine, which has already sold £20,000 worth of ore.

The mine is situated in a strata of granite and kilias, the former being exactly similar to the granite which yielded such great results at Gunn Lake, and the latter being in every respect like that which has yielded such unprecedented returns at the Great Devon. The presence and junction of these two formations are highly favourable to good deposits of copper, and the mine is traversed by cross-courses, which appear to be necessary to the development of profitable copper mining. The character of the lode at the shaft is wider than the general run of granite lodes, which is a promising feature, and it runs nearly vertical, which is also a further advantage. Gossan is found in the lode at the 58, a good indication of a deep and profitable mine; and, lastly, the kind of copper ore which is found in this lode is of the highest quality, so that the smallest quantities would be remunerative. In these peculiarities, every known circumstance which tends to great success exists, and the discovery of a remunerative deposit may be made at any moment.

Particulars and conditions may be had 10 days prior to the sale of the liquidators, at the office of the company, 104, King's Arms-yard, Moorgate-street; of H. WICKHAM, Esq., 1, Tokenhouse-yard, Lothbury; at Garraway's; and of the auctioneer, 2, Crown-court, Threadneedle-street, London. For further particulars, and to view, applications to be made to Capt. Cock, resident at the mine.

PUBLIC AUCTION at ALFRED CONSOLS MINE, SEPTEMBER 8th, 1863, at Eleven o'clock A.M.
The most important sale that has come under the notice of the public for some years.

MR. JOHN BURGESS, Barncoose Farm, near Redruth, Cornwall, WILL SELL, BY PUBLIC AUCTION, at ALFRED CONSOLS, two miles from the port of Hayle, superior ENGINES, FOURTEEN BOILERS, 7 balance bolts, 4 capstans, 1 steam capstan, 3 sets of lofts shears, 1 English coil, 300 to 400 fms. of pitwork; plunger and drawing lifts, 19 in. down to 7 in.; 3000 to 4000 ft. of best pitch pine, shaft rods, staples, glands, rod pins, lagged and trapping plates to fit, capstan rope, a very large quantity of the very best MINING MATERIALS.

One 90 in. cylinder PUMPING ENGINE, 11 ft. in the cylinder, 10 ft. in the shaft, with four boilers and fittings, about 14 tons each.
One 80 in. cylinder PUMPING ENGINE, 10 ft. in the cylinder, 10 ft. in the shaft, equal beam, with three boilers and fittings, about 12 tons each.

The above engines and boilers are on the very best principle, bright and in good condition.
One 60 in. cylinder PUMPING ENGINE, 9 ft. in the cylinder, 8 ft. in the shaft, with THREE BOILERS and fittings, 10 to 11 tons each.
One 35 in. STEAM DRAWING WHIM, 6 ft. stroke, with ONE BOILER; steam capstan attached.

One 26 in. STEAM DRAWING WHIM, 6 ft. stroke, with ONE BOILER.
One 24 in. STEAM DRAWING WHIM, 6 ft. stroke, with ONE BOILER and crusher attached.

1 English oak shears, 40 ft. legs, with four 6 feet sheaves and brasses, at the 90 in. engine.
1 shears at the 80 in. engine, 54 ft. legs, sheaves and brasses.
4 capstans, 12 arm, 10 arm, and 8 arm.

200 fms. of 16 in. capstan rope, not much used (18 months old).
200 fms. of 12 in. capstan rope.
200 fms. flat and round rope.
300 to 400 fathoms. pitwork drawing and plunger lifts, (sized) 19 in., 18 in., 16 in., 14 in., 12 in., and 7 in.

3000 to 4000 ft. of best pitch pine shaft-rod, 36 to 60 long sizes, 14 in., 12 in., 8 in. H and top door pieces, and working barrels to match.
4 skips, 12 tram-wagons.

YARD.—WATER WHEEL, 7 ft.; a quantity of flat and round squares, 2 ft., 4 ft., and 6 ft.; also shaft rolls; an immense quantity of timber; 14 in. squares, whole balk, half timber, and plank; about 50 tons of old cast and wrought iron.
SMITHS' SHOP.—2 40 in. bellows, 3 anvils, 2 vices; smiths and miners' tools; new and old iron.

STONE ROOM.—Old brass, a quantity; old and new borers, steel; four sets of pulley blocks adapted for any size.
MACHINERY.—A quantity of old junk; shovel and pick hilts; 4 large scales, beams, and weights.

Any further information can be obtained of Mr. BURGESS, the auctioneer, Barncoose Farm, Redruth; the agents, on the mine; or THOMAS ROBINSON, Esq., the purser, Hayle, Cornwall.

NOTE.—An omnibus will be in waiting at the Hayle Station at 10.25 A.M. to take purchasers to the above mine.
ORDER OF SALE.—The sale will commence with old timber, precisely at Eleven A.M., until noon; then on pitwork and other materials. Engines at the dinner table.
Dated Alfred Consols, Hayle, Aug. 20, 1863.

ROUND HILL LEAD MINES.
Four miles from MINSTERLEY, in the county of SALOP.

MR. W. BONSTRED has been favoured with instructions to SELL BY AUCTION, without reserve, on Thursday, 10th September, 1863, the whole of the VALUABLE and EXTENSIVE MACHINERY and MATERIALS of the above MINES, comprising 12 fms. 9 in. pumps, H piece, 8 in. pole, door piece, and windbore; 20 fms. 8 in. pumps, door pieces, and clanks, complete; 22 fms. 7 in. drawing lift, windbore, and door piece; 30 fms. 6 in. pumps, stuffing box, door piece, glands, staples, bolts, burrs, and joint rings; 86 fms. red deal main rods, strapping plates, complete; 13 fms. red deal bucket rods, and strapping plates; poppet head, with pulley, and pit frame; 54 fms. pit ladders; 31 fms. 1 1/2 in. flat rods; angle bob, on frame, and axle; 24 iron pulleys; 5 ft. crown wheel, with double crank pedestal and brasses, with 26 fms. sweep rods, and travelling bob; 27 fms. 1 1/2 in. bucket rods; 200 fms. iron rails, 2 1/2 in. by 1/2 in. with clips; a large quantity of lance sleepers; 3 T bolts, with pedestals and brasses; 12 wagon wheels, 12 iron wagons, 12 barrows, 60 fms. flat iron chain, 2 iron kibbles, iron winzes, large red deal cistern, 24 ft. x 12 ft. by 8 ft.; 200 fathoms launders, 7 gitting hutchies and frames, 2 round buddies, with 12 ft. water wheel, and washing tackle, complete; weighing machine, iron weights, large crank, 5 ft. 6 in. spur wheel, 2 lifting jacks, segment for capstans, two 36 in. smith's bellows, 2 anvils, 2 vices, smiths' tools, miners' tools, carpenters' tools, 2 carpenters' benches, screw stock, dial; quadrant, legs, and box, by Wilton; 4000 slates, 16 in. by 10 in.; and a large quantity of other effects, too numerous to mention.

Sale to commence at 12 for 1 o'clock, to a minute. Catalogues to be had upon application to the auctioneer, Pontefract. To view the materials, apply to Capt. WATERS, upon the mines. Refreshments on the table at 12 o'clock.
N.B.—Trains leave Shrewsbury for Minsterley at 7 A.M. and 10.40 A.M.

RHONDDA VALLEY, GLAMORGANSHIRE.
MR. W. H. HARRIS WILL SELL, BY AUCTION, at the New Inn, Pont-y-Pridd, on Monday, the 28th day of September, at Three o'clock in the afternoon, subject to such conditions as shall be then produced, all that colliery known as the BWLLFA COLLIERY, situate at YSTRAD, RHONDDA VALLEY, GLAMORGANSHIRE.

This colliery is on the Rhondda Fawr branch of the Taff Vale Railway, is distant from the port of Cardiff 20 miles, and is in direct communication with the narrow gauge system of the West Midland and other railways.

The coal field has an acreage of 432 acres, and is nearly held under the Countess of Dyvallon, for a term of 60 years, from the 29th of September, 1882, at a dead rent of £430, payable half-yearly, and at the following royalties:—Nos. 1 and 2, Rhondda vein, 6d. per ton (2520 lbs.); No. 3, ditto, 8d. per ton.

One level has been opened upon the property. The vein of coal now worked has a thickness of 3 ft. of first-rate quality coal, and lies at an inclination of about 1 1/2 inch in the yard.

There are blacksmiths' shop, weigh-house, machine, screen, good siding accommodation, and everything necessary for the working

VALENCIA SLATE SLAB QUARRIES, COUNTY KERRY, IRELAND.

Messrs. Fuller and Horsey are instructed to sell, by auction, at the Auction Mart, London, on Wednesday, October 28, at 12 o'clock, (unless an acceptable offer be previously made by private contract), the **EXTENSIVE QUARRIES AND MILLS OF THE VALENCIA SLATE SLAB COMPANY**, situated in the island of Valencia, County Kerry, Ireland. The works have been carried on by the present company for about 14 years, and a very large outlay has been made in opening the quarries, and in erecting the mills and the requisite machinery. The quarries are situated on the side of a mountain, about 420 ft. above the sea level, and an opening has been made for working about 120 ft. wide, running into the mountain to about the same depth, uncovering a succession of platforms of slates of various widths. The slate rock lies most conveniently for working, at an angle of about 35°, and has a regular cleavage. The slabs are severed by wedges instead of by blasting, thus avoiding the large amount of waste occasioned by the latter process. The roof of the quarry is self-sustained, and is perfectly secure.

The quality of the slabs is now well known and appreciated, and are taken in large quantities by the principal merchants in London and elsewhere. They take a beautiful and permanent polish, are particularly valuable for enamelling, and unaffected injuriously by furnace heat, and are raised in larger sizes than from any other quarry. The waste from the slabs blocks is made into roofing slates, for which there is ample local demand. The present yield is about 3000 tons of slate slabs annually, but by a comparatively small outlay in an extension of the workings this quantity may be doubled, the machinery at the mills being equal to prepare that quantity, and the demand at the present time being in excess of the capabilities of supply.

The mills are situated about 2½ miles from the quarries, are connected by a good road of easy descent, which is kept in repair principally at the expense of the county; but every facility would be afforded by the Knight of Kerry, who is the freeholder, for laying down a tramway by the side of the present road, which would much lessen the cost of transit. The mills are most advantageously placed, being immediately contiguous to the pier, at which vessels of 300 tons burden can load alongside, and there are no pier dues or wharfage payable. The harbour of Valencia is both safe and commodious, and freights to London are about the same as from the North Wales ports.

The buildings are well arranged, and substantially erected. They are fitted with sawing and planing machinery of the best description, fitted by Blyth, of Limehouse; and there are overhead cranes, tramways, and every appliance for saving manual labour. There are also 10 dwelling houses, manager's residence, and about 35 acres of farm land.

There is a plentiful supply of water for the purposes of the mills from a large open reservoir. The quarries and works are held by lease from the Knight of Kerry on easy terms. The present company have expended upwards of 40,000l. upon the property. They have succeeded in establishing the reputation of, and a market for, the slabs, and have thoroughly proved the existence and uniform character of the slate, and the extent to which the workings may be carried; and they have supplied and fitted the most approved modern machinery for the preparation of the slate for market, and it is confidently believed that the works are now in that state that, in the hands of two or three individuals, very profitable results may be anticipated.

The works may be viewed by cards only, which, with further particulars, may be had of Messrs. Palmer, Kesteven, and Elwin, solicitors, 4 Trafalgar-square, W.C.; at the "Midland Counties Herald" Office, Birmingham; at the Gresham House, Stock-street, Dublin; at the Railway Hotel, Killarney; at the Adelphi Hotel, Liverpool; at the Mart, London; and of Messrs. Fuller and Horsey, 13, Billiter-street, London, E.C.

Messrs. W. Derry and Co., Mining Material Merchants, St. Austell, respectfully inform the mining public that they have constantly on sale every description of MINING PLANT, in STEAM ENGINES, pitwork, and dressing appliances, which they are prepared to offer on very advantageous terms, and such as will especially commend themselves to the projectors of new undertakings. Applications to be addressed as above, or to the engineer of the company, Mr. W. D. Glast, St. Austell. Dated St. Austell, August 12, 1863.

WILLIAM MATTHEWS, ENGINEER, TAVISTOCK, has for sale:—ONE 30 in. CORNISH PUMP ENGINE, with BOILER 9 tons; ONE 14 in. HORIZONTAL WHIM ENGINE and cage, with BOILER 4½ tons; TWO 10 horse PORTABLE ENGINES, for winding or pumping; ONE CORNISH CRUSHER; ONE 30 ft. diameter WATER WHEEL, 9 ft. breast, iron axle, sockets and rings; 60 fms. of 3 in. flat-rods, with pulleys.

BLOWING ENGINES FOR SALE AT THE NITHSDALE IRONWORKS, NEAR CUMNOCK, BY PRIVATE BARGAIN—TWO CONDENSING BLAST ENGINES, of the best construction, working expansively 150 horse power each, with FIVE BOILERS, erected a few years ago by Messrs. Murdoch, Aitken, and Co., of Glasgow, and which were used only during the short time the Nithsdale furnaces were in blast.

Also, an AIR VESSEL, 150 ft. in length, 6 ft. diameter, ¼ in. plates; and 130 ft. length of SMOKE TUBE, 40 in. by 22, from heating stoves to blast engine chimney, ¼ in. plates. All other appurtenances are complete, and the whole in good working order.

For further particulars, application may be made to ROBERT LOWMEYER, liquidator of the Western Bank of Scotland, Glasgow; BANCAROT and Kinkwood, writers, Glasgow; or HAMILTON ROSE, writer, Cumnock, with any of whom offers may be lodged by intending purchasers within three weeks from this date.—August 21, 1863.

FOR SALE, a very EXCELLENT WATER WHEEL, 40 feet high and 8 feet wide, iron axle, sockets, saddles, and gun-metal bearings; three sets of iron segments, pumping tank, two balance-bobs. Never had much work.—Application to be made to Mr. THOS. KNIGHT, Gunnis Lake, near Tavistock.

FOR SALE, a NEW TURBINE WATER WHEEL, horizontal motion, 4 ft. in diameter. Also, a very fine strong IRON CRANE, and DOUBLE and SINGLE PURCHASE WINCH; 15 cwt. travelling WEIGHING MACHINE, together with a very large wrought-iron worm, and cone DRASHING MACHINE, for steam power, complete.—Apply to Messrs. BOND and Co., 6, Tabley-street, Liverpool.

FOR SALE, 19½ in. FORCING PUMP, 14 in. LIFTING PUMP, HAND PUMPS, pumping crank, lifting screw, pit chain, and other colliery material.—Apply to Mr. JOHN FARLER, Nailsea, near Bristol.

FOR SALE, BY PRIVATE CONTRACT, the CWM BACH COLLIERY, situated about two miles from the town of Swansea, in the county of Glamorgan, and within 70 yards of the South Wales Railway, having the six-foot and three-foot seams of HIGH BITUMINOUS COAL, now open and in good working order, with engine, boiler, pumping and winding gear, complete, now working on both seams, and open for inspection on application to the proprietor, or to the manager on the works. For further particulars apply to the proprietor, Mr. DANIEL JONES, No. 48, Strand, Swansea.

MINERAL ESTATE ON THE YORKSHIRE COAST, NEAR SCARBORO—THE ROYALTY TO LET.—It abounds with rich seams of ALUM ROCK, DOGGER, or CEMENT STONE, IRON ORE, JET, FREESTONE, LIAS LIMESTONE, and MATERIALS for MAKING FIRE BRICKS, &c. A capitalist could easily bring this property into profitable working. If a joint-stock company were formed, the proprietor would take a number of the shares.—Apply to Mr. HAMMOND, Raven Hall, Scarborough.—September 4, 1863.

IRONSTONE ROYALTY TO LET, in a property of 160 acres, containing the VALUABLE CLEVELAND SEAM, which is intersected by the North-Eastern Railway, and is conveniently offered to the notice of ironmasters, &c., as possessing unequalled facilities for the ECONOMIC MANUFACTURE of PIG IRON. There is a splendid site for furnaces close to the line, with sidings for materials, and TIP GROUND for SLAG. An inexhaustible supply of PURE WATER, SAND, and BUILDING STONE on the property. The ironstone can be won at a minimum cost by drift, at an elevation to command the furnaces. The proprietor has fully OPENED out the MINE, formed a permanent main gateway to the face of the stone, sank an air shaft, all is ready for a start.—For further particulars apply to Mr. E. DONKIN, land agent, Barnby Moor, York; or to Messrs. WALKER and LANGBOURNE, Lillors, Malton, Yorkshire.

TO BE LET, and entered upon at Michaelmas next, the PREMISES at RHYD-Y-MWYN, near MOLD, FLINTSHIRE, at present occupied by Messrs. Taylor and Co., as an IRON FOUNDRY. These premises are desirably situated, about three miles from Mold, on the River Alyn, in the very heart of the Mold mining district, and possessing an extensive water-power, well calculated for being used as a foundry, as at present, or for the establishment of a manufactory for wagons and other rolling stock.

The Mold and Denbigh Railway, for which an Act of Parliament has already been obtained, will pass within a few yards of the works. The water-wheels at present on the works can be had at a valuation.

Mr. BOWDAKE, Tyddyn-y-Gwynn, near Mold, will show the premises; and further particulars may be had on application to Mr. G. M. DIXON, Bucknole House, Waplington, Dorset.—Bucknole House, August 29, 1863.

DINAS FIRE-BRICKS—Messrs. FREDERICKS and JENNER beg to offer these well-known bricks, equal to their Dinas Bridge or Kidwelly Works, and can safely recommend them as EQUAL, if not SUPERIOR, to ANY FIRE-BRICKS MANUFACTURED, having the highest testimonials from the largest copper smelters and consumers in the world.—Full particulars, with testimonials, prices, &c., can be had on application to their agent, Mr. GEORGE YOUNG, Britton Ferry, South Wales; or the Dinas Bridge Brick Works, Glyn Neath; Kidwelly Brick Works, Kidwelly; or Messrs. EASTWOOD, Belvidere-road, London.

TO INVENTORS—ALL INTENDING PATENTEES should PROCURE THE PRINTED INFORMATION regarding PATENTS, their COST and the MODE OF PROCEDURE to be adopted, ISSUED GRATIS by the GENERAL PATENT COMPANY (LIMITED), 71, FLEET STREET, LONDON. R. MARSDEN LATHAM.

MR. GEORGE HENWOOD, MINING ENGINEER, LOCHHEAD HOUSE, LOCHWINNOCH, SCOTLAND, OFFERS his SERVICES and ADVICE on mines situated in any part of England, Scotland, Wales, Ireland, Isle of Man, &c. Mr. Henwood's extensive experience in his peculiar department of mining science is well known, and will be exerted to the utmost for the benefit of his clients.

BRITISH AND FOREIGN STOCK, SHARE, AND MINING OFFICES, No. 2, WINCHESTER BUILDINGS, GREAT WINCHESTER STREET, LONDON, E.C.

Messrs. FULLER and CO. continue to BUY and SELL EVERY DESCRIPTION of SHARES in BANKS, CANALS, MINES, RAILWAYS, and GOVERNMENT STOCK, either for money or account. Stock Exchange business effected upon the usual commission.

Capitalists who seek safe and profitable investment will find that mines afford a wider range for profit than any other public security, and pay dividends quarterly from 12½ to 20 per cent. per annum. Progressive mines frequently advance hundreds per cent. in value.

Messrs. FULLER and CO. having channels for the disposal of shares comprised in the miscellaneous list, invite the holders thereof to communicate with them; and having had upwards of 20 years' experience in the mining market, are prepared to advise as to the purchase of shares for an early advance in price, and for becoming a safe and remunerative investment.

Telegraphic messages promptly attended to, and every information supplied, either personally or by letter. Office hours, from Ten to Four o'clock. Bankers: The Metropolitan and Provincial, Cornhill.

Tavistock Ironworks, Devon.—(Established 1804.)

GILL AND CO., ENGINEERS AND IRONFOUNDERS, MANUFACTURERS OF STEAM ENGINES AND BOILERS, CHAINS OF ALL DIMENSIONS, STEELED SHOVELS to any pattern. EVERY DESCRIPTION OF CAST AND HAMMERED IRON for MINING, MANUFACTURING, and AGRICULTURAL PURPOSES. HAMMER MILLS. EDGE TOOL MANUFACTORY. FOREIGN MINES SUPPLIED ON LIBERAL TERMS. VARIOUS DESCRIPTIONS OF SECOND-HAND MACHINERY CONSTANTLY ON HAND. N.B.—AGENTS for TANGY'S PATENT HYDRAULIC LIFTING JACK, and WESTON'S PATENT DIFFERENTIAL PULLEY BLOCKS.

International Exhibition, 1862.

CLASS IX.—PRIZE MEDAL for AGRICULTURAL PORTABLE STEAM ENGINES and MACHINERY. CLASS VIII.—PRIZE MEDAL for HORIZONTAL HIGH PRESSURE STEAM ENGINES.

For "Good arrangement, good workmanship, and practical success." **CLAYTON, SHUTTLEWORTH, AND CO., ENGINEERS**, MANUFACTURERS OF PORTABLE AND FIXED STEAM ENGINES, MACHINERY for PUMPING, HOISTING, GRINDING, SAWING, and AGRICULTURAL PURPOSES, &c., adapted for any part of the world.

STAMP END WORKS, LINCOLN; and 78, LOMBARD STREET, LONDON. Descriptive, illustrated, and priced catalogues free per post.

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EDGE AND SON, MANUFACTURERS OF IMPROVED FLAT and ROUND CHAINS and WIRE ROPES, for MINING PURPOSES. BOULES, KIBBLES, BOILERS, IRON BLOCKS, and BLOCK CHAINS. RAILWAY COUPLINGS, HORSE TRACES, CRANE CHAINS, and SHIPS' CABLES. MANUFACTORY, COALPORT, SHROPSHIRE.

Prize Medal, International Exhibition, 1862.

AYELING and PORTER'S PATENT TRACTION ENGINES and LOCOMOTIVES for MINERAL RAILWAYS. For prices, illustrated description, and testimonials, apply to AYELING and PORTER, engineers, Rochester, Kent.

RAILWAY STONE and COAL WAGONS TO BE LET.—Apply to Messrs. W. L. and T. UNDERHILL, Tipton.

RAILWAY CARRIAGE COMPANY (LIMITED), ESTABLISHED 1847. OLDBURY WORKS, NEAR BIRMINGHAM.

MANUFACTURERS OF RAILWAY CARRIAGES and WAGONS, and EVERY DESCRIPTION OF IRONWORK. Passenger carriages and wagons built either for cash or for payment over a period of years.

RAILWAY WAGONS FOR HIRE. CHIEF OFFICES, OLDBURY WORKS, NEAR BIRMINGHAM. LONDON OFFICES, 6, STOREY'S GATE, GREAT GEORGE STREET, WESTMINSTER.

THE BIRMINGHAM WAGON COMPANY (LIMITED) is PREPARED to SUPPLY RAILWAY WAGONS of EVERY DESCRIPTION, capable of carrying 6, 8, or 10 tons, at annual rentals, or for purchase on deferred payments, on advantageous terms. EDWARD FOWLER, Secy. OFFICES, 3, NEWHALL STREET, BIRMINGHAM.

ELLIS LEVER, INVENTOR and MANUFACTURER of the IMPROVED SAFETY BRATTICE and FLEXIBLE TUBING, 28, MARSDEN SQUARE, MANCHESTER. MANUFACTORY, WEST GORTON WORKS, MANCHESTER.

COAL CUTTING MACHINERY.—THE WEST ARDSLEY COMPANY, having, by recently patented improvements, perfected their coal cutting machinery, worked by compressed air, are NOW READY to MAKE CONTRACTS for the CONSTRUCTION and USE of their MACHINES. The results of twelve months' experience in the working of these machines, by the West Ardsley Company, have proved most satisfactory, their use being found to CHEAPEN the COST and IMPROVE the average SIZE of the COAL, to LIGHTEN the LABOUR, and also to MODIFY the SANITARY CONDITION of the MINE. All communications to be made to Messrs. FIRTH, DUNSTON, and BOWEN, No. 8, Britannia-street, Leeds.

NOTICE.—THE WEST ARDSLEY COMPANY, having reason to believe that their patents are being infringed upon, hereby give notice that they will TAKE LEGAL PROCEEDINGS AGAINST ALL PARTIES who may MAKE FOR SALE, or USE ANY MACHINERY in the construction of which any such INFRINGEMENT is MADE.

EDWARDS'S PATENT MINERAL ORE and COAL WASHING MACHINE.—This is by far the MOST ECONOMICAL, as well as the MOST PERFECT MACHINE MADE. Each machine is capable of washing 25 to 60 tons per diem, according to quality.—Full particulars, testimonials, &c., may be obtained from E. EDWARDS, Esq., C.E., 1, York-buildings, Adelphi, where a working model may be seen.

Adopted by the Governments of Great Britain, Spain, Denmark, Russia, Brazil, East and West Indies.

EASTON'S PATENT BOILER FLUID, FOR REMOVING and PREVENTING INCORUSTATION IN STEAM BOILERS, LAND and MARINE. P. S. EASTON and G. SPRINGFIELD, Patentees and Sole Manufacturers, 27, 28, and 29, WAPPING WALL, LONDON, E. Or of their Agents in the principal towns of Great Britain and the Colonies.

SHORTTRIDGE, HOWELL, and CO., HARTFORD STEEL WORKS, SHEFFIELD, SOLE MANUFACTURERS of HOWELL'S PATENT HOMOGENEOUS METAL PLATES for BOILERS, LOCOMOTIVE FIRE BOXES, and TUBES, COMBINING the STRENGTH of STEEL with the MALLEABILITY of COPPER. RUSSELL and HOWELL'S PATENT CAST STEEL TUBES. MCCONNELL'S PATENT HOLLOW RAILWAY AXLES.—For prices and terms, apply to SHORTTRIDGE, HOWELL, and Co., Hartford Steel Works, Sheffield; or Messrs. HARVEY and Co., 12, Haymarket, London.

NICKEL and COBALT REFINING, and GERMAN SILVER WORKS, 16, OOEZEL STREET NORTH, BIRMINGHAM. STEPHEN BARKER begs to inform the Trade that he has the following articles for sale:—REFINED METALLIC NICKEL. OXIDE OF COBALT. (WIRE, &c.) REFINED METALLIC BISMUTH. GERMAN SILVER—in INGOTS, SHEET, NICKEL and COBALT ORES PURCHASED.

GOLDENHILL, COBALT, NICKEL, COLOUR, BORAX, and CHEMICAL WORKS, NEAR STOKES-UPON-TRENT, STAFFORDSHIRE. JOHN HENSALL WILLIAMSON, MANUFACTURER and REFINER. Reference.—Professor Miller, King's College, London.

IMPROVED APPLICATION OF WATER-POWER.

THE TURBINE—MACADAM BROTHERS and CO., ENGINEERS, SOHO FOUNDRY, BELFAST, have been engaged for 12 years, with complete success, in MANUFACTURING their IMPROVED TURBINES, and can recommend them with confidence.

This machine is applicable to all practicable heights of fall and quantities of water, giving a much higher percentage of power than any other description of water-wheels. On low falls it has the additional advantage of not being affected by floods or back-water, and it is particularly well adapted for any falls where the quantity of water is variable. Further particulars on application; also, references to turbines now at work on a great variety of falls.

The Railway System of the World.

TESTIMONIAL TO WILLIAM HENRY JAMES, C.E., In recognition of his unrequited public services in connection with the founding of our magnificent railway system, by the gratuitous assistance he rendered his late father, William James, Esq., of Warwick, land agent, ironmaster, and civil engineer, in surveying, levelling, and planning the Liverpool and Manchester Railway, with its branches to Bolton, &c., in the years 1821, 1822, and 1823, the first established for engine passenger transit; and for his having allowed the late George Stephenson and his partner, Mr. Losh, of Newcastle-upon-Tyne, the liberty of using his invention of the introduction of Tubes into the boilers of (their) locomotive engines, as shown by an agreement, dated Sept. 1, 1821, which introduction of Tubes, as first suggested by Mr. William Henry James, and since adopted, modified, and perfected by the engineering profession, is well known to every engineer to have caused the entire success of the modern railway system; and, lastly, to compensate him in some slight degree for the loss of his patrimony of £50,000, as settled by will, as well as private property of great value, by the ruin of his father, in 1823, while so engaged, and while so assisting him in laying the foundation of the great railway system of the world, which has already conferred such inestimable benefits upon mankind.

As a guarantee, the following eminent engineers and gentlemen have already attached their names in furtherance of this testimonial, to which it is expected many others will soon be added, viz:—

GEORGE KENNIE. SIR JOHN MACNEILL. THOMAS BRASSET. JOSEPH PARKES. SIR CHARLES FOX. PETER BARLOW. WM. SCHOLEFIELD, M.P. JOSEPH PARKES. WM. MARSDEN, M.D.

PERSONAL REFERENCES. Mr. RICHARD MIDDLETON, *Mining Journal*, 36, Fleet-street. Mr. RICHARD A. BROOKMAN, *Mechanics Magazine* office, 166, Fleet-street. It is respectfully requested that all contributions may be made to Messrs. CURTIS and Co., bankers, London, who have kindly consented to receive such subscriptions; and any sums offered will be carried to the credit of "Subscriptions for W. H. James, C.E.," and will be held at his disposal. A complete list of subscribers, together with the amount of their donations, will be published as soon as they shall reach an adequate amount.

NICHOLLS, WILLIAMS, AND CO., ENGINEERS,

BEDFORD IRONWORKS, TAVISTOCK. MANUFACTURERS OF STEAM ENGINES of EVERY DESCRIPTION, made on the BEST and NEWEST PRINCIPLES. We beg most especially to call the attention of the public to the manufacture of our BOILERS, which have been tested by most of our leading engineers. PUMP WORK CASTING of EVERY DESCRIPTION, both of brass and iron. HAMMERED IRON and HEAVY SHAFTS of ANY SIZE. CHAINS made of the best iron, and warranted. RAILWAY WORK of EVERY DESCRIPTION. ALL ORDERS FOR ABROAD RECEIVE THEIR BEST ATTENTION. NICHOLLS, WILLIAMS, and Co. have had 20 years' experience in supplying machinery to foreign mines, and selecting experienced workmen to erect the same, where required.

FISHER BROTHERS AND CO., FIRE BRICK MANUFACTURERS, STOURBRIDGE. BLAST FURNACE BRICKS of the MOST DURABLE QUALITY SUPPLIED to ANY SPECIFICATION.

HALL AND WELLS, PATENTEES AND MANUFACTURERS OF SUBMARINE TELEGRAPH CABLES, &c.—TELEGRAPH CONDUCTORS INSULATED WITH INDIA RUBBER at 4½ per mile and upwards, PARTICULARLY ADAPTED for MINING PURPOSES. Further particulars as to price of cores, cables, &c., can be had on application at 60, Aldermanbury, City, E.C.1; and Steam Mills, Mansfield-street, Borough-road, Southwark, S.E. Copper wire covered with silk, cotton, or any other material, to order.

HUNTER'S PATENT SLATE SAWING and PLANING MACHINE COMBINED. Saws both sides of a slab at the same time.

HUNTER'S PATENT SLATE BLOCK SAWING MACHINE. Cuts blocks to any thickness, hard or soft, and any number of cuts at the same time.

HUNTER'S PATENT CIRCULAR and RECTILINEAR PLANING MACHINE COMBINED.

HUNTER'S PATENT RIDGE STONE CUTTING MACHINE. Cuts upwards of 100 feet run per day from solid rock.

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Who respectfully begs to bring the above to the notice of the mining public, as an exceedingly cheap and easy method of applying water-power for the above purposes. The TURBINE, WINDING, and PUMPING MACHINERY are all fixed complete to one strong cast-iron bed plate, which can be placed in any situation without pit or excavation, and any height not exceeding 33 ft. from bottom of fall, the supply and suction pipe being all that is required to be connected to it, and can be brought in any direction. This combined machine can be easily removed when necessary.

G. Low begs also to state that the TURBINE is the most efficient and the cheapest method of applying water-power for mining purposes.

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IMPROVED TURBINE WATER WHEELS CONSTRUCTED either to WORK VERTICALLY or HORIZONTALLY, and upon the MOST SCIENTIFIC and EFFECTIVE PRINCIPLE.

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WASTE NO OIL.

STRONG IRON OIL CISTERNS, NOT LIABLE TO LEAK, and ECONOMISE SPACE in the STORES:—

250	"	55 × 78	6 10 0	30	"	21 × 30	1 5
200	"	33 × 72	6 0 0	25	"	19 × 30	1 5
150	"	30 × 66	5 5 0	20	"	19 × 26	1 2
100	"	27 × 55	4 10 0	10	"	15 × 21	0 15

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Capitalists who seek safe and profitable investments, free from risk, should act only upon the soundest information. The market prices for the day are for the most part governed by the immediate supply and demand, and the operations of speculators, without reference to the bona fide merits of the property. Railways depend upon the traffic, expenditure, and capital accounts, the probabilities of alliance or competition with neighbouring companies, the creation of new shares, the state of the money market as affecting the renewal of debentures, and other considerations founded on data to which those only can have access who give special attention to the subject. Mines afford a wider range for profit than any other public securities. The best are free from debt, have large reserves, and pay dividends bi-monthly varying from £15 to £25 per cent. per annum. Instances frequently occur of young mines rising in value 400 or 500 per cent. But this class of security, more than any other, should be purchased only upon the most reliable information. The undersigned devote special attention to railways and mines, afford every information to capitalists, and effect purchases and sales upon the best possible terms. Thirty years' experience in mining pursuits justifies us in offering our advice to the uninitiated in selecting mines for investment; we will, therefore, forward, upon receipt of Post-office order for 6s., the names of six dividend and six progressive companies that will, in our opinion, well repay capitalists for money employed.

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THE MINING SHARE LIST

DIVIDEND MINES.

Shares.	Mines.	Paid.	Last Pr.	Bus. done.	Last Call.
1000	Alderley Edge (Cheshire) [L.]	10 0 0	—	—	—
4000	Bedford United (copper), Tavistock	2 6 8	—	—	—
1248	Boscawell (tin), Copper, St. Just	6 15 0	—	—	—
240	Boscawell (tin), St. Just	20 10 0	—	—	—
300	Botalack (tin), Copper, St. Just	91 8 0	—	—	—
4000	Bromford (lead), Cardigan [L.]	2 7 8	—	—	—
4000	Carn Brea (copper), Illogan	15 5 7	—	—	—
3000	Chiverton (lead), Penryn	15 0 0	—	—	—
3000	Clifford Amalgamated (cop.), Gwenn	30 0 0	—	—	—
1024	Copper Hill (copper), Redruth	12 0 0	—	—	—
1000	Copper Miners of England	25 0 0	—	—	—
4000	Ditto ditto (stock)	100 0 0	—	—	—
1000	Craddock Moor (copper), St. Cleer	8 0 0	—	—	—
512	Cragshaw and Penkell, St. Columb	—	—	—	—
867	Cwm Erwin (lead), Cardiganshire [L.]	7 10 0	—	—	—
128	Cwmystwith (lead), Cardiganshire	60 0 0	—	—	—
280	Dewent Mines (all-lead), Durham	800 0 0	—	—	—
1024	Devon St. Con. (cop.), Tavistock [S.E.]	1 0 0	—	—	—
358	Dolcoath (copper), Camborne	128 17 6	—	—	—
12800	Drake Walls (tin), Copper, Calstock	2 1 0	—	—	—
8000	Drygwyn (lead), Wales	12 6 8	—	—	—
312	East Bassett (cop.), Redruth [S.E.]	29 10 0	—	—	—
6144	East Caradon (copper), St. Cleer [S.E.]	2 14 6	—	—	—
300	East Darnley (lead), Cardiganshire	82 0 0	—	—	—
128	East Pool (tin), Copper, Pool, Illogan	24 0 0	—	—	—
3900	Foxdale (lead) Isle of Man [L.]	25 0 0	—	—	—
1000	Frank Mills (lead), Devon	3 18 6	—	—	—
1708	Great Wharfedale (lead), Yorkshire	18 0 0	—	—	—
1024	Great Wharfedale (tin), Copper, Illogan	40 0 0	—	—	—
1024	Gunn's Lake (all-lead), Devon	0 0 0	—	—	—
1000	Harold's (all-lead), near Liskeard [S.E.]	8 10 0	—	—	—
1000	Herberton Mine Company	92 6 2	—	—	—
4000	Lisburne (lead), Cardiganshire, Wales	18 15 0	—	—	—
9000	Marke Valley (copper), Cardigan	4 10 6	—	—	—
1000	Miners Mining Co. [L.] (id.), Wrexham	25 0 0	—	—	—
30000	Mining Co. of Ireland (cop., lead, coal)	7 0 0	—	—	—
440	Mount Pleasant (lead), Mold	4 0 0	—	—	—
4000	Mynydd Iron (cop.), St. Cleer [S.E.]	2 10 0	—	—	—
280	Nancy Mines (all-lead), Montgomery	30 0 0	—	—	—
5334	North Trekerby (copper), St. Agnes	1 0 0	—	—	—
4000	Oradell (lead), Flintshire	0 0 0	—	—	—
6400	Par Consols (cop.), St. Blazey [S.E.]	1 2 6	—	—	—
307	Parya Mines (copper), Anglesey [L.]	60 0 0	—	—	—
1773	Polymer (tin), St. Agnes	—	—	—	—
512	Polbreton (tin)	8 0 0	—	—	—
1113	Providence (tin), Uny Lelant [S.E.]	10 6 7	—	—	—
6000	Rosehill Hill and Ransom United	2 16 0	—	—	—
16	Rosemount (lead)	80 0 0	—	—	—
512	South Caradon (cop.), St. Cleer [S.E.]	425 0 0	—	—	—
512	South Toluca (cop.), Redruth, Cornwall	9 0 0	—	—	—
8000	South Exmouth (lead), Cornwall	41 43	—	—	—
4000	South Exmouth (lead), Cornwall	1 0 0	—	—	—
4000	St. Wh. Frances (cop.), Illogan [S.E.]	18 18 6	—	—	—
1024	St. Woodley (lead), Cornwall	0 5 6	—	—	—
280	Sparrow Moor (tin), Copper, St. Just	31 17 6	—	—	—
940	St. Ives Consols (tin), St. Ives	8 0 0	—	—	—
1000	Tinoroff (cop., tin), Pool, Illogan	9 0 0	—	—	—
1000	Trumpet Consols (tin), near Helston	11 10 0	—	—	—
1000	Vigra and Clogau (copper) [L.]	2 15 0	—	—	—
6000	West Bassett (copper), Illogan [S.E.]	1 10 0	—	—	—
1024	West Caradon (cop.), Liskeard [S.E.]	8 0 0	—	—	—
280	West Darnley (copper), Gwennap	38 10 0	—	—	—
4000	West Darnley Consols (tin and copper)	7 10 0	—	—	—
4000	W. Wh. Baseton (cop.), Camborne [S.E.]	47 10 0	—	—	—
512	Wheal Bassett (copper), Illogan [S.E.]	5 2 6	—	—	—
1000	Wheal Bassett and Grylls (tin)	7 0 0	—	—	—
1024	Wheal Grylls (tin), Penryn	2 4 0	—	—	—
888	Wh. Ludcott and Wrey (lead), St. Ives	2 10 6	—	—	—
888	Wh. Margaret (tin), Uny Lel. [S.E.]	30 29 1	—	—	—
1024	Wh. Mary Ann (id.), Menheniot [S.E.]	8 0 0	—	—	—
80	Wheal Oriel (tin), St. Just, Cornwall	70 0 0	—	—	—
394	Wheal Trevelyan (all-lead), Liskeard [S.E.]	5 17 0	—	—	—
2044	Wheal Trevelyan (tin), Gwennap	6 11 3	—	—	—
4000	Wicklow (copper) [L.]	8 0 0	—	—	—

* Dividends paid every two months. † Dividends paid every three months.

MINES WITH DIVIDENDS IN ABEYANCE.

284	Condurow (cop., tin), Camborne	35 0 0	—	90 92 1/2	—
2450	Cook's Kitchen (copper), Illogan	17 15 0	—	26	—
4072	Dayton and Cornwall (copper)	5 16 3	—	—	—
473	Ding Dong (tin), Guisance	40 18 6	—	—	—
840	Fowey Consols (copper), Fowey	10 0 0	—	—	—
8000	Great South Toluca (S.E.), Redruth	0 14 6	—	3 1/2	—
8000	Kelly Bray (lead, copper), Callington	4 18 6	—	3 1/2	—
1600	Levant (copper), tin, St. Just	2 10 0	—	—	—
8000	New Birch Tor and Vitrifer Cons. (tin)	1 6 6	—	—	—
4072	Newtownards Mining Co., Co. Down	60 0 0	—	—	—
4072	Rosewarne Consols (copper)	3 19 0	—	—	—
8000	Tamar Con. (all-lead), Berrisford [S.E.]	4 10 0	—	—	—
577	Trelawny Consols (tin), St. Ives	12 10 0	—	—	—
1024	Wendron Consols (tin), Wendron	13 18 10	—	—	—
60	West Burton Hill (lead), Yorkshire	0 0 0	—	—	—
324	Wheal Buller (cop.), Redruth [S.E.]	5 0 0	—	42 1/2	—
8000	West Chiverton (lead), Penryn	31	—	31 32	—
128	Wheal Friendship (copper), Devon	60 0 0	—	—	—
1024	Wheal Hoarles (tin), St. Just	10 18 8	—	—	—
813	Wheal Jane (silver-lead), Kes	3 10 0	—	14 1/2	—
1024	Wheal Killy (tin), Uny Lelant [S.E.]	2 6 6	—	10 1/2	—
4294	Wheal Killy (tin), St. Agnes	5 4 6	—	8 1/2	—

FOREIGN MINES.

2444	Burra Burra (cop.), South Australia	5 0 0	—	—	—
6000	Central American (silver) [L.]	5 0 0	—	—	—
12000	Cobre Copper Co. (cop.), Cuba [S.E.]	40 0 0	—	31	—
10000	Coppor Mining Company, Chile [L.]	16 0 0	—	30 32	—
18000	East Indian Coal, Calcutta [L.]	10 0 0	—	—	—
70000	English and Australian [S.E.]	5 0 0	—	—	—
25000	Fortuna (lead), Spain [L.]	2 0 0	—	4 1/2	—
25000	Gen. Mining Assoc., Nova Scotia [S.E.]	20 0 0	—	22	—
80000	Kapunda Mining Co., Australia [S.E.]	1 0 0	—	—	—
10000	Linares (id.), Potosi, Bolivia [S.E.]	3 0 0	—	—	—
10000	Lustitana (id.) (of Portugal) [S.E.]	2 0 0	—	—	—
12815	Marquette and New Granada [S.E.]	1 0 0	—	1 1/2	—
100000	Port Phillip (gold), Clunes [S.E.]	1 0 0	—	1 1/2	—
11000	St. John del Rey [L.]	15 0 0	—	57	—
43714	Uny Lelant (all-lead), Mexico [S.E.]	28 0 0	—	7	—
40000	West Canada Mining Company [L.]	1 0 0	—	—	—
50000	Yandassutana (cop.), S. A. [L.]	3 0 0	—	2 1/2	—

FOREIGN MINES WITH DIVIDENDS IN ABEYANCE.

10000	Altman and Quammanen Unl. (cop.) [L.]	4 10 0	—	—	—
10000	Barriar Lead, Min. & N. Z. [L.]	4 10 0	—	—	—
10000	Pontigbad (all-lead), France [S.E.]	20 0 0	—	—	—

NON-DIVIDEND FOREIGN MINES.

35000	Alamillos (lead), Spain [L.]	0 10 0	—	—	—
20000	Australian (copper), South Australia [S.E.]	7 7 6	—	—	—
20000	Bearis Tin Streaming Company [L.]	0 15 0	—	—	—
74000	Bon Accord, South Australia (copper) [L.]	1 0 0	—	—	—
14000	Cape Copper Mining Company [L.]	4 0 0	—	—	—
25000	Capita (silver), Mexico [L.]	0 15 0	—	—	—
17000	Central Italian (copper) [L.]	0 6 0	—	—	—
60000	Clarendon Consols (copper), Jamaica [S.E.]	1 2 6	—	—	—
10000	Coppor Smelting [L.]	10 0 0	—	—	—
100000	Dun Pedro North Del Rey (gold), Brazil [L.]	1 0 0	—	1 1/2	—
75000	Dun Mountain (copper), New Zealand [L.]	1 0 0	—	—	—
25000	East del Rey (gold), Brazil [L.]	1 0 0	—	—	—
20000	East Kongsberg Native Silver Mining Co. of Norway [L.]	1 7 6	—	—	—
20000	Elbe Colliery Company, Bohemia [L.]	1 0 0	—	—	—
20000	Ellerslie and Bardsley (copper), Jamaica	0 18 0	—	—	—
80000	English and Canadian Mining Company [L.]	5 0 0	—	—	—
40000	Fortuna (copper), West Australia [L.]	2 0 0	—	—	—
20000	Great Northern (copper), South Australia [L.]	1 10 0	—	—	—
24000	Hindostan (copper), Bengal [L.]	3 0 0	—	—	—
4000	Hop Silver-Lead and Copper Mining Co. [L.]	1 0 0	—	—	—
10000	Karibits Colliery Company [L.]	1 0 0	—	—	—
10000	Lagunado (sulphur, copper), Portugal [L.]	1 0 0	—	—	—
100000	Montes Aures (gold), Brazil [L.]	2 0 0	—	2 1/2	—
3000	New Burra Burra (copper), Australia	5 0 0	—	—	—
60000	New Granada (gold), South America [S.E.]	1 0 0	—	—	—
10000	New Grand Duchy of Baden (silver-lead), near Freiburg	1 0 0	—	—	—
60000	North Rhine Copper of South Australia [L.]	0 17 6	—	—	—
40000	Nova Scotia (land and gold) [L.]	1 0 0	—	—	—
15000	Pachuta Silver Mining Company, Mexico [L.]	1 0 0	—	—	—
17000	Quebrada (copper), Venezuela [L.]	3 10 0	—	—	—
10000	San Roque (copper), Spain	5 0 0	—	—	—
60000	Santa Barbara (gold), Brazil [L.]	0 10 0	—	—	—
130000	Scottish Australian Mining Company [L.]	0 15 0	—	—	—
15000	South Europe Mining Company, Spain [L.]	3 0 0	—	—	—
50000	St. John's United (copper, lead), Newfoundland [L.]	1 0 0	—	—	—
12000	Tepitit Colliery Co., Bohemia [L.]	3 0 0	—	—	—
50000	Vallanueva (gold), Italy [L.]	1 0 0	—	—	—
10000	Vancouver (coal) [L.]	0 10 0	—	1 1/2	—
45000	Vitor Kimmell (copper), Italy [L.]	1 0 0	—	—	—
1000	Western Africa Malachite (copper) [L.]	110 0 0	—	—	—
13000	Wheal Ellen (copper), South Australia [L.]	5 0 0	—	—	—
80000	Worthing (copper), South Australia [L.]	1 0 0	—	—	—

PROGRESSIVE MINES.

Shares.	Mines.	Paid.	Last Pr.	Bus. done.	Last Call.
700	Aberdovey (all-lead), Merioneth	1 10 0	—	—	—
4000	Aberdovey (lead), Cardigan	0 10 0	—	—	—
12000	Anna Maria (id., cop., gold) [L.]	1 0 0	—	—	—
35000	Atlas Min. and Smelt. [L.]	1 14 0	—	—	—
6000	Baglor [L.]	1 14 0	—	—	—
400	Baldwin, I. of Man [L.]	2 15 0	—	—	—
1624	Balshadden (tin), St. Just	8 7 0	—	—	—
10000	Bampfildy (copper), Devon	1 0 0	—	—	—
4000	Bedford Consols (copper)	2 6 0	—	—	—
2000	Berehaven (copper), Ireland	1 0 0	—	—	—
400	Billins [L.]	30 0 0	—	—	—
2800	Boscundell (tin, cop.), St. Austell	7 10 0	—	—	—
1600	Bosconia & Bolewell, St. Just	6 5 0	—	—	—
5000	Bottle Hill (tin), Plymouth	3 7 0	—	—	—
13000	Brea Con. (tin), St. Ives [L.]	1 10 0	—	—	—
6000	British (tin and cop.) [L.]	10 12 0	—	—	—
4000	Brookwood (cop.) Ashburton	12 6 0	—	—	—
112	Bron-Hanlog (id.), Denbighshire	20 0 0	—	—	—
5120	Brynambor (id.), Cardigan [L.]	2 8 0	—	—	—
200	Brynford Hall (lead), Flint	25 0 0	—	—	—
800	Bryn Gwlog (lead), Flint	8 0 0	—	—	—
1861	Bryntall (lead), Llandudno	7 17 6	—	—	—
6380	Buller and Bassett Unit. (cop.)	4 1 6	—	—	—
2000	Burra Burra (cop.), Kenwyn	2 10 0	—	—	—
2200	Burren (lead, cop.) [L.]	1 17 0	—	—	—
12000	Calstock Consols (cop.), Unl.	1 10 0	—	—	—
915	Calvaadock, Wendron (tin)	35 16 0	—	—	—
1000	Camborne Consols (copper)	18 0 0	—	—	—
4000	Camborne Vean & Wh. Francis	8 19 4	—	—	—
75000	Cambrian Consol. (id.) [L.]	1 0 0	—	—	—
914	Caradon Cons. (cop.), St. Cleer	26 19 0	—	—	—
4046	Caradon Hill (copper)	2 1 6	—	—	—
6000	Caradon Unit. (copper)	0 10 0	—	—	—
10000	Cardigan Vale (copper)	5 0 0	—	—	—
10000	Cardigan United (lead, cop.)	5 0 0	—	—	—
2580	Cardinham United (lead)	0 18 0	—	—	—
6000	Carn Camborne (copper)	0 18 0	—	—	—
4370	Carnarvon (id., cop.), Mawgan	1 8 0	—	—	—
3000	Carn Vivian (tin, cop., lead)	2 1 0	—	—	—
9448	Carnyorth (tin), St. Just	4 5 0	—	—	—
20000	Carysfort (3200 £2 pd., 16800 £1 pd.)	2 2 0	—	—	—
10000	Castleward, Ireland [L.]	1 0 0	—	—	—
2500	Cefa Cilcen (id.), Flint [L.]	2 3 0	—	—	—
200	Cefn Cwrt, Trewynon [L.]	2 3 0	—	—	—
2500	Central Miners' Assn. [L.]	2 1 0	—	—	—
6000	Charlotte Unit., Perranuthnoe	4 1 8	—	—	—
4000	Clara Unit., Porthewy [L.]	14 6 0	—	—	—
787	Clljha & Wentworth (tin, cop.)	31 5 0	—	—	—
3585	Cool Mawr Pool (lead) [L.]	5 0 0	—	—	—
16000	Cooldarra and Bond, Ireland	1 0 0	—	—	—
50000	Connoree (cop., sulph.) [L.]	1 0 0	—	—	—
10000	Corunna (tin) (7000 £2 pd., 3000 10s. paid)	1 0 0	—	—	—
861	Crane (copper), Camborne	16 10 0	—	—	—
12000	Crelake (cop.), Tavistock	2 10 0	—	—	—
8000	Crookham (cop.) [L.]	2 10 0	—	—	—
2000	Crown Cons. (cop.) [L.]	1 10 0	—	—	—
2000	Crowm (lead), Ireland	1 10 0	—	—	—
6000	Cudra (cop., tin), St. Austell	13 16 0	—	—	—
1800	Cwmbran (lead) [L.]	2 3 0	—	—	—
80000	Dale, N. Staf. [L.] (31000 £1 pd., 9000 7s. 6d. pd.)	2 10 0	—	—	—
2000	Deep Level, Miners [L.]	3 8 0	—	—	—
12000	Devon Union (copper) [L.]	1 0 0	—	—	—
4568	Devon Wheel Buller (copper)	4 10 0	—	—	—
20000	Dolfr-y-nog (gold) [L.]	10 0 0	—	—	—
1000	Durio (tin), Lelant	8 2 0	—	—	—
5000	Dulta (tin) [L.]	1 0 0	—	—	—
1000	Eaestbrook (lead) [L.]	1 0 0	—	—	—
600	East Abrahams (lead), Cornwall	1 0 0	—	—	—
4096	East Alfred Consols (copper)	6 13 7	—	—	—
1000	East Bassett and Grylla (tin)	1 0 0	—	—	—
3000	E. Beam (tin), St. Aust. [L.]	7 0 0	—	—	—
6000	E. Bottle Hill (tin), Plymouth	0 2 6	—	—	—
4096	East Brookwood (copper)	1 7 0	—	—	—
5000	E. Bronfloyd (all-ld.) Card. [L.]	2 0 0	—	—	—
50000	East Cambrian (gold) [L.]	10 0 0	—	—	—
6000	East Carn Brea (cop.) Redruth	3 18 0	—	—	—
2000	East Chiverton (lead)	1 7 0	—	—	—
6000	E. Cloghan (lead), Merioneth [L.]	1 11 0	—	—	—
6000	East Damsel (lead), Cornwall	1 10 0	—	—	—
4000	East Devon G. Consols (cop.)	1 9 0	—	—	—
1200	East Drylle (lead) [L.]	3 0 0	—	—	—
2048	E. Falmouth (s.-ld.), Kenwyn	4 5 6	—	—	—
6000	E. Grenville (cop.), Camborne	1 15 0	—	—	—
4000	E. Gunnis Lake & S. Bedf. (cop.)	7 3 6	—	—	—
6145	East Jane (all-ld.), Cardinham	1 15 6	—	—	—
1024	E. Margaret (tin), Uny Lelant	8 5 0	—	—	—
6000	East Martha (L. £2 10s.)	1 5 0	—	—	—
4096	E. Providence (tin), Uny Lel.	2 14 4	—	—	—
6000	E. Rosewarne (cop.), Gwinn.	2 8 0	—	—	—
5618	East St. Austell (cop.), Camb.	8 8 0	—	—	—
256	East Tolgus (lead), Redruth	62 0 0	—	—	—
1024	E. Treaskerby (cop.), Redruth	7 10 0	—	—	—
1190	E. Wheel Agar (cop.), St. Cleer	11 2 0	—	—	—
2000	E. Wh. Fortune (tin), Sitchey	1 0 0	—	—	—
2048	East Wheel Grylla (tin, cop.)	0 10 0	—	—	—
1906	E. Wh. Lovell (tin), Wendron	2 13 6	—	—	—
4000	E. Wh. Russell, Tavish. [S.E.]	8 9 0	—	—	—
2000	Erwelin (lead) [L.]	0 10 0	—	—	—
6000	Furze Hill Wood Cons., Buckl.	1 1 0	—	—	—
1026	Garden (tin), Morvah	4 17 0	—	—	—
1000	Garland (tin), Wendron	1 0 0	—	—	—
1000	Garreg (lead), Cornwall	9 0 0	—	—	—
4000	Gawton (copper), Trevelick	2 2 0	—	—	—
6000	Gen. Min. Co. for Irel. (cop.)	4 0 0	—	—	—
30000	Glasgow Caradon Cons. [L.]	—	—	—	—
4992	Goginan (all-ld.) [1900 £124, 9992 25s.]	—	—	—	—
6144	Gonamena (copper), St. Cleer	3 18 0	—	—	—
4000	Goonbarrow & Molinins (tin)	2 0 0	—	—	—
2000	Goonson (copper), St. Neot	1 2 6	—	—	—
486	Gran. & St. Aub. (cop.) [S.E.]	56 0 0	—	—	—
6000	Great Brigan (copper)	5 11 0	—	—	—
6000	Great Caradon (cop.), St. Ives	—	—	—	—
10000	Gr. Der. & Redruth (all-ld.) [L.]	2800 50s. pd.]	—	—	—
15000	Great Laxey (lead) [L.]	4 0 0	—	—	—
5000	Great North Downs (copper)	2 10 0	—	—	—
6000	Gr. Retallack (all-ld., blende)	2 1 6	—	—	—
52000	Great Tegreus Consols (cop.)	0 5 0	—	—	—
3720	Great Wheel Badden (tin)	6 16 0	—	—	—
6000	Gr. Wh. Busy (cop., tin), Ken.	15 16 6	—	—	—
119	Great Work (tin), Gernoe	100 0 0	—	—	—
5000	Grosvener (id.) [2500 £1 pd., 2500 7s. pd.]	—	—	—	—
4910	Gurlyng (cop., tin), St. Erth	—	—	—	—
6000	Gwynedd Park Con., Llanf.	2 19 0	—	—	—
4000	Harwood (id.) [L.]	0 5 6	—	—	—
7219	Hawkmor (tin, cop.) Calstock	3 2 0	—	—	—
6000	Hawking Down (cop.) [S.E.]	5 8 6	—	—	—
10000	Holmbush (5000 £25 s. pd., 5000 15s. pd.)	10 0 0	—	—	—
6000	Hilogan (tin and copper)	10 0 0	—	—	—
5000	Iale of Man (slate)	2 0 0	—	—	—
6000	Kewick (lead), Portincale	5 6 6	—	—	—
6000	Lady Bertha (cop.) [S.E.]	12 0 0	—	—	—
1019	Leeds & St. Aubyn (tin, cop.)	7 6 4	—	—	—
963	Liant Cons. (tin), Uny Lelant	36 0 0	—	—	—
21	Llanann (id.), Glasg. [L.]	0 0 0	—	—	—
4000	Llanfawr (lead, coal) [L.]	3 0 0	—	—	—
2000	Long Lake (lead), Flint	4 5 0	—	—	—
2000	Lower Park Denbighshire [L.]	3 7 0	—	—	—
10000	Lower Taldras (slate) [L.]	2 10 0	—	—	—
6000	Maudlin (copper)	3 17 0	—	—	—
4480	Merilyn (lead), Flint	3 18 0	—	—	—
22000	Merryfield (lead) [L.]	10 12 0	—	—	—
3475	Michell (lead), Flint	0 5 6	—	—	—
1024	Mill Pool (copper)	15 15 0	—	—	—
5000	Molland (cop.), S. Moulton	—	—	—	—
121	Nantles (tin), Llanf.	14 0 0	—	—	—
5000	Nantico (all-ld.), Llanbar	—	—	—	—
5000	Nantico and Penrhyn [L.]	32 12 0	—	—	—
612	Nant Miners [L.]	4 16 0	—	—	—
2400	Nant-y-Iago (id.), Merioneth	3 17 6	—	—	—
6400	Nether Heath (lead), Duffon	0 15 6	—	—	—
6400	N. Crow Hill (id.), St. Stephen	2 8 6	—	—	—
6000	New E. Brech Tor and Vitter	—	—	—	—
6514	New E. Wh. Russell, Tavistock	0 6 0	—	—	—
400	New Hendra (tin, cop.), Breage	1 0 0	—	—	—
6400	New Penbryn (tin and cop.)	1 0 0	—	—	—
6000	New S. Caradon (cop.), St. Ives	10 6 0	—	—	—
6000	New Treleigh Cons. Redruth	1 18 0	—	—	—
980	New Trevenen (tin), Wendron	7 0 0	—	—	—
1024	New Wendron (tin)	7 0 0	—	—	—
1024	New Wh. Grylla (tin and cop.)	2 1 6	—	—	—
10000	New Wheel Martha (cop.) [L.]	1 0 0	—	—	—
6000	New Wheel Prospindick	0 7 6	—	—	—
400	New Wh. Seton (cop.), Camb.	25 0 0	—	—	—
2500	N. Wh. Vaddon (tin), Marazion	1 8 0	—	—	—
1024	North Redruth (cop.), Redruth	24 12 6	—	—	—
1024	Nye, Clifford (tin), Cornwall	3 0 0	—	—	—
20000	North Devon (all-ld.) [L.]	0 12 0	—	—	—
5000	N. Dolcoath (cop.), Camborne	18 16 6	—	—	—
5000	N. Dolcoath & Carnarvon Cons.	2 13 0	—	—	—
5000	N. Foxdale (id.) of Man [L.]	1 0 0	—	—	—
2000	South Gorland (copper)	3 18 0	—	—	—
2000	South Grylla (copper) [L.]	1 0 0	—	—	—
1024	South Herodotus (copper)	4 10 0	—	—	—
5000	S. Minera (lead) [L.]	2 5 4	—	—	—
5325	So. Phoenix (cop.) Linkin.	6 19 4	—	—	—
1024	South Trevelan (cop.), S. Penryn	1 10 0	—	—	—
937	So. Wh. Crofty (cop.), Illogan	15 3 0	—	—	—
1024	So. Wh. Ellen (cop.), St. Agnes	9 18 2	—	—	—
1000	South Wh. Kitty (tin), Lelant	10 10 0	—	—	—
6000	So. Wh. Lalsare (tin and cop.)	0 2 0	—	—	—
1024	So. Wh. Lovell (tin), Wendron	1 0 7 0	—	—	—
400	So. Wh. Seton (cop.), Camborne	4 3 0	—	—	—
794	Spearne Cons. (tin), St. Just	6 12 0	—	—	—
970	St. Aubyn and Grylla (cop.)	7 14 6	—	—	—
16000	St. Cuthbert Ld. Smet. [L.]	3 0 0	—	—	—
40000	St. David's (gold) [L.]	3 0 0	—	—	—
4000	St. E. B. Cons. (cop.), Redruth	2 13 0	—	—	—
1024	St. Ives Wheel Allen (tin)	10 7 0	—	—	—
8000	St. Just Unit. (tin) [L.]	2 10 0	—	—	—
6000	St. Just Consols (tin) [L.]	2 0 0	—	—	—
640	Strap Office (lead), Mold.	1 0 0	—	—	—
920	Stray Park (cop., tin) [S.E.]	32 5 6	—	—	—
3000	Tee Side (id.), Cumb. [L.]	0 13 0	—	—	—
6000	Tolcarne (cop.), Camborne	1 8 0	—	—	—
6000	Tolvaaden (copper), Marazion	1 0 0	—	—	—
2000	Trefalun Unit. (tin), St. Endor	3 18 0	—	—	—
6000	Treloweth (cop.), Uny Lelant	12 2 0	—	—	—
1024	Trenor Unit. (tin), Penryn	1 12 6	—	—	—
112	Trevelin and Seadick Cons.	12 6 0	—	—	—
5800	Trevelan and Tremerehore	6 12 0	—	—	—
4096	Treweatha (all-ld.), Menhen	5 9 0	—	—	—
2048	Treworla (tin), Wendron	3 18 10	—	—	—
2500	Trimley Hall (1250 £1 pd., 1250 15s. pd.)	—	—	—	—
4000	Trumpet Unit. (tin), Wendron	1 9 6	—	—	—
6400	Tyne Head (id., cop.) [L.]	0 14 0	—	—	—
6000	Tynehead (all-ld.), Cardigan	0 5 0	—	—	—
1024	Trynham Consols (tin)	2 15 6	—	—	—
30000	Valley of Towry (lead), Cam.	1 0 0	—	—	—
1000	Wentnor (id.) [L.]	2 0 0	—	—	—
6000	Welsh Gold, Dolobry [L.]	1 0 0	—	—	—
3000	West Alfred (cop.) [L.]	1 0 0	—	—	—
20000	West Beam (L. £1)	0 17 6	—	—	—
100	W. Bryn Gwlog (id.) [L.]	230 0 0	—	—	—
40000	West Cloghan (gold)	1 0 0	—	—	—
1218	W. Condurrow (tin, cop.) Cam.	8 13 10	—	—	—
16	West Denbigh (id.), Denbigh	85 0 0	—	—	—
30000	West Devon Con. (cop.) [L.]	1 0 0	—	—	—
4216	W. Great Work (tin), Gernoe	1 0 0	—	—	—
6000	W. Grylla (tin), Penryn	0 6 0	—	—	—
18000	W. Maria (tin),				